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AUTHOR:

WHYMPER, EDWARD

TITLE:

CHAMONIX AND THE RANGE OF MONT BLANC

PLACE:

LONDON

DATE:

1896

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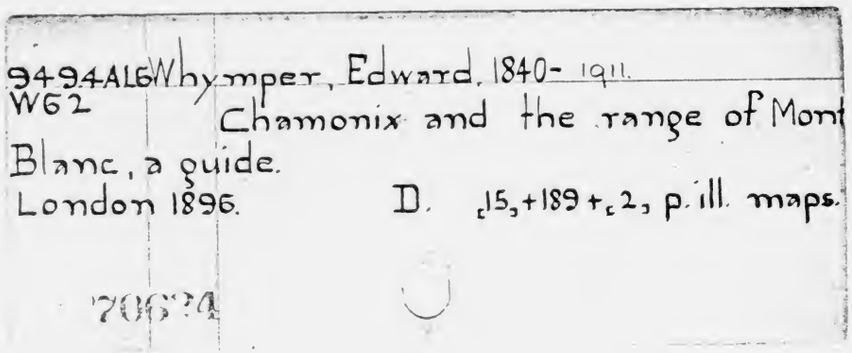

9494AL6 Whymper, Edward, 1840- 1911.
W62 Chamonix and the range of Mont Blanc, a guide.
London 1896. D. [15], 189 + [2], p. ill. maps.

706?4

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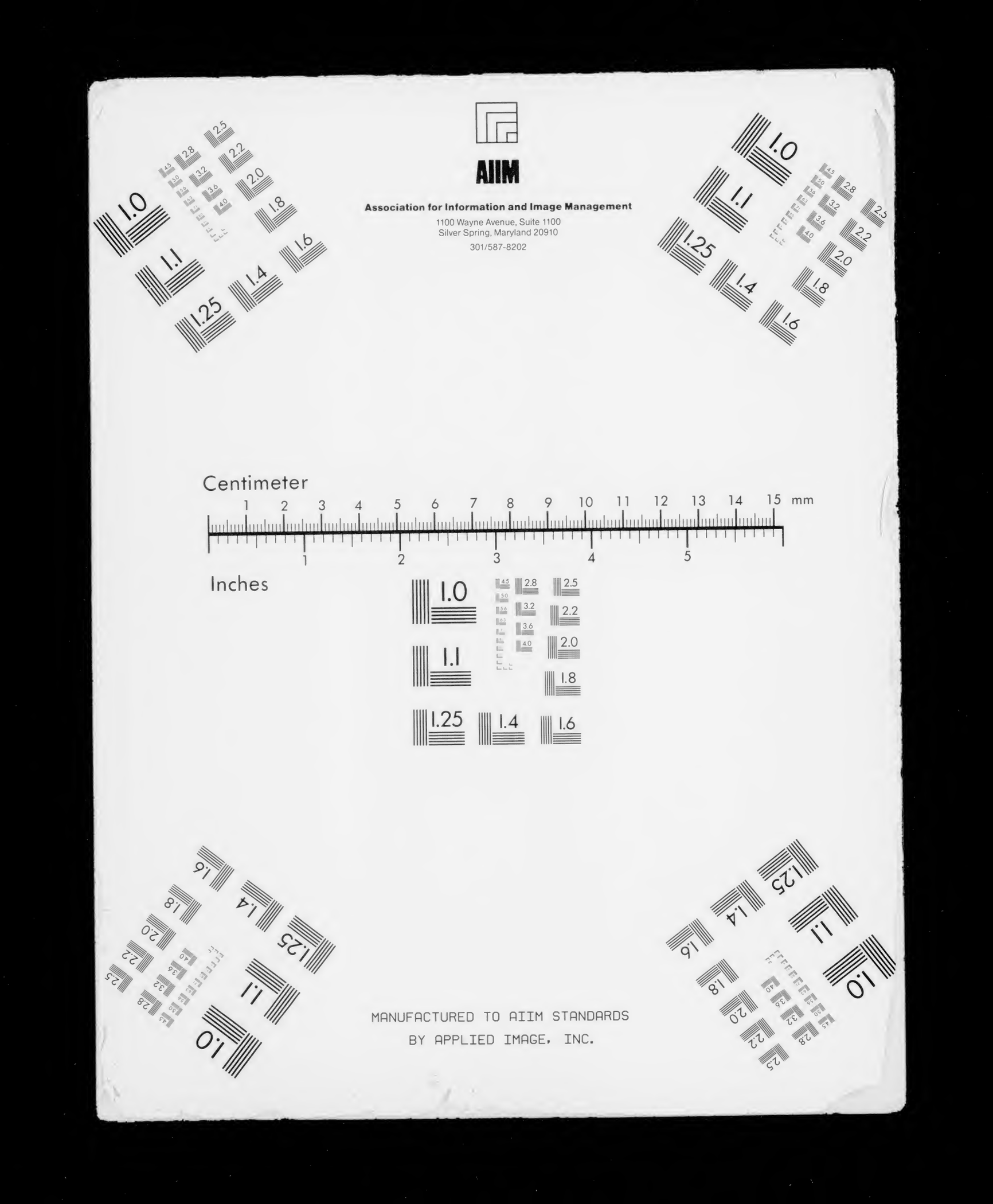
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CHAMONIX

AND THE RANGE OF

MONT BLANC

A GUIDE BY

EDWARD WHYMPER

WITH ILLUSTRATIONS & MAPS

LONDON
JOHN MURRAY, ALBEMARLE STREET
1896

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Printed by R. & R. Clark, Limited, *Edinburgh.*

236665

INTRODUCTION.

In this little book I endeavour to give in a small compass information which some may desire to have at home, and that others will wish for on the spot. It deals both with past and present. The historical portion is followed by the topographical; and, at the end, in the Appendix, there are lists of Guides, the 'Tarifs' of Excursions, and Tables of the Peaks and Passes (arranged alphabetically), etc. Whilst aiming at conciseness, I have tried to avoid the extreme condensation which, in some Guide-books, produces a feeling of bewilderment.[1]

The Illustrations, for the most part, are subjects which have not been engraved before, and the authorities for them have all been obtained expressly for this work. I am indebted to the Paris, Lyons, and Mediterranean Railway Company for the basis of the Plan of Chamonix; to MM. the Chief Guides of Chamonix and Courmayeur for assistance in the preparation of the Lists of Guides; to the late Mr. C. D. Cunningham and Mr. J. Eccles for useful information; and to Messrs. W. E. Davidson, F. C. Grove, Horace Walker and J. W. Wicks for tracing their respective routes up the Aiguille du Dru, the Aiguille de Bionnassay, Mont Blanc by the Brenva Glacier, and the Pic Sans Nom.

The following hints may be of some service to those who visit Chamonix and Mont Blanc for the first time.

Expenses.—The cost of living is moderate throughout the Mont Blanc district in general, and in not a few of the Hotels *pensionnaires* are taken on very favourable terms. More will be got for money by settling down at a few places for a length of time than by constantly moving from one hotel to another; and there are several spots which are excellent centres, besides Chamonix. At Champex and in the Salvan district prices are unusually low.

Money.—Take some Napoleons (20-franc pieces), a small quantity of French silver for wayside expenses, and the rest in sovereigns and £5 Bank of England notes. The notes can be changed at Geneva, Chamonix, Courmayeur and Martigny. Sovereigns go every-

[1] This, for example, is a line from a well-known Guide-book, 'made in Germany.'—"Hotel de Zurich (Pl. h; E, 5), R., L., & A. 3½, D. 3½ fr.; Cigogne (Pl. i; F, 4),"

where, except at the very smallest places. English silver is not understood, and will not pass. Beware of small Italian silver coins, which are supposed to be withdrawn from circulation.

Clothing.—Woollen goods and flannels are most suitable. It answers better to have several changes of thin garments than to be provided with a few thick ones. **Mountain-boots** should be taken out, and got into use before starting. The *nailing* is best done on the spot. The nails usually supplied by English bootmakers are not adapted for mountain-walking.

Rope.—If excursions are contemplated on which it will be desirable to use rope, it will be best to take rope out. There is none in the market equal to the Manilla rope which is specially manufactured by Buckingham, which *ought* to be identified (amongst other ways) by a red thread woven among the strands. It is to be regretted that there are spurious imitations abroad, in which this red thread is fraudulently copied. Beware of them.

Ice-axes of good quality and at moderate prices can be obtained at the village of les Bossons, near Chamonix, from Simond Bros., the makers.

Soap.—There is a great opening for soap in Alpine regions, and at the present time it pays to carry a cake.

Baggage.—The minimum of baggage sometimes means the maximum of comfort. Anyone who has no more than he himself can transport conveniently, can travel more quickly, pleasantly, and economically than those who exceed that limit. On the other hand, innkeepers look with suspicion upon travellers with little or no baggage, and are apt to thrust them into the very worst rooms.

Luggage can be conveniently and securely sent in advance to Chamonix by the South-Eastern Railway or by the London, Chatham and Dover Railway. It will probably not be opened, or tampered with *en route*. In returning from Chamonix, I do not recommend travellers to send luggage, apart from themselves, by the Diligence Company (Société anonyme de la correspondance des Chemins de Fer Paris-Lyon-Mediterranean, and Jura-Simplon).

Passports should be carried. Though a prolonged tour may be made in France, Switzerland, and Italy without finding any use for them, occasions sometimes arise when they are desirable or necessary, and it is best to be on the safe side.

Language.—French is the language for Chamonix and the Range of Mont Blanc. It is recognized at Chamonix that there is such a language as English, and not a few Chamoniards speak English, but their natural modesty sometimes restrains them from exercising their accomplishments. Almost as much French as Italian is spoken at Courmayeur.

Custom-houses.—In going to Chamonix *viâ* Annemasse one avoids the examination which would occur if one went *viâ* Geneva. In returning to Paris direct from Chamonix *viâ* Annemasse, baggage in

the traveller's possession is examined at Bellegarde, and registered luggage is examined at Paris. When proceeding from Chamonix into Switzerland by the Tête Noire or *viâ* Salvan, a douanier is encountered at Châtelard. Travellers by the Col de Balme, by the Col du Bonhomme and de la Seigne, or by the high snow passes, escape visitation. Of late years, there has been an increasing fussiness at *Swiss* Custom-houses, and duty is now often levied or claimed at them upon articles which formerly passed free and without question.

Maps.—The folding Map of the Chain of Mont Blanc, at the end of the volume, in conjunction with the plans in the text, will be found sufficient for most purposes. Those who desire greater detail must turn to the Government Maps of France, Switzerland and Italy.

1. The map by Capt. Mieulet, scale $\frac{1}{40000}$. This gives the central portion of the Range, and, as far as it goes, includes the Italian as well as the French side, but it does not include the two ends of the Range. It is clearly executed, upon the whole accurate, and is perhaps the most generally useful of the maps that are mentioned.[1]

2. Map of the Etat-Major français, scale $\frac{1}{80000}$, sheets 160 bis, and 160 ter. These sheets embrace the route from Annemasse to Chamonix, and give the French side of the southern end of the Range of Mont Blanc, which is not included in Mieulet's map. They do not, however, give any part of the Swiss or Italian side. The sheets are not well executed, and the copies in circulation are badly printed.

3. The Swiss end of the Range is given in Sheet XXII of the Carte Dufour, scale $\frac{1}{100000}$. This sheet is beautifully executed, but it is now almost superseded by

4. The Topographische Atlas der Schweiz, scale $\frac{1}{50000}$, published under the superintendence of Col. Siegfried. A map (made up from several of the sheets of this atlas) has been issued entitled Martigny—Gd. St. Bernard—Combin, which embraces all the Swiss end of the Range. Price five francs. This is, after Mieulet's, the most useful map to possess.

5. For the Italian side of the Range of Mont Blanc, consult Sheets 27, 28 of the Carta Italia, scale $\frac{1}{50000}$. This map is badly executed, and many of the names and heights can scarcely be made out.

All of the above Maps can be obtained through Mr. Stanford, 26, 27 Cockspur St., Charing Cross, London, or of Messrs. Georg, 10 Corraterie, Geneva, but they are not always kept in stock. The Map of the Chain of Mont Blanc by Mr. A. Adams-Reilly, from an actual survey in 1863-4, *which embraces the whole of the range*, upon a scale of $\frac{1}{50000}$, has long since been out of print, and is difficult to procure.

Upon engaging Guides.—Though no recommendations are given in this book, I cannot refrain from referring to two of my oldest friends at Chamonix, the brothers Frédéric and Michel Payot. M. Frédéric Payot earned my gratitude in 1865, by volunteering his assistance at a time when I was placed in a great difficulty. Since then he has risen to be Guide Chef thrice, and has ascended Mont Blanc more than a hundred times. His brother Michel shewed his capacity at

[1] The full title of this map is *Massif du Mont Blanc, extrait des minutes de la carte de France, levé par Mr. Mieulet Capne. d'Etat Major, publié par ordre de S. E. le Mal. Randon, Ministre de la Guerre.* Paris. 1865.

an early age, and has, I believe, made more 'first ascents' in the Range of Mont Blanc than any other guide on the Register (see page 53).

There is good material amongst the Guides of Chamonix, but it goes without saying that in a body numbering more than 300, which includes the greater part of the able-bodied males between the ages of 23 and 60, there are men of various capacities and different characters. The recommendations that I should make in regard to the choice of guides at Chamonix and Courmayeur are just those which I would make in regard to guides at any other places. 1. Before engaging a Guide, make enquiry of his antecedents from those who know. 2. Avoid men notorious for accidents. 3. For difficult or long excursions give preference to men of middle age rather than to the youngest or oldest.

I do not attempt to decide whether a traveller should employ guides. Some persons are competent to carry out by themselves all the excursions that are mentioned. A larger number, however, are not equal to this. Inasmuch as I am unacquainted with the various capacities of my readers, I am unable to say whether they need not, or should employ guides. Everyone must decide that for himself.[1]

The **Société suisse des Hôteliers** has recently published a small book containing the following remarks, which shew the views of Swiss Hotelkeepers upon several matters of general interest.[2]

Ordering Rooms in advance.—It is said that "A rather remarkable confusion of ideas prevails among the travelling public as to this frequently occurring question, which, in the height of the season especially, causes numerous unpleasant discussions."

"In a great measure this is owing to the advice contained in travellers' guide-books, advice, which, we are willing to admit, is given in good faith, and with the intention of guarding the interest both of traveller and of landlord. This advice is to the effect, 'that rooms should be ordered in advance especially when one is due to arrive at a late hour.' But owing to the fact that in the respective notices in guide-books, neither the question of *right* nor the *commercial* aspect of such ordering of apartments has been in the least discussed, there has arisen among a great many travellers the one-sided opinion, that ordering beforehand will, to a certain extent, ensure to the guest a claim, a power of disposal, without binding him to any reciprocal obligation."

Let us now examine the following considerations:

1. Which traveller has the greater claim to accommodation,
   (a) the one who arrives early at the hotel, or (b) the one who by letter, by telegram, or only by telephone makes known his intention to put up there, and either arrives late at night or does not even arrive at all; whereas the former by his timely presence appears to be the better customer.
2. An agreement, a contract in which claims and counter-claims are stipulated, must be concluded by at least *two* parties.
   A *one-sided* order from the traveller does not give him the slightest *legal claim* to consideration, for in such a case there is lacking:
   (a) a declaration on the part of the second party (the landlord) that he *can* and *will* accept the order; (b) *the traveller's guarantee* that he will fulfil the obligation *entered into* by giving the order.

[1] It is presupposed that my readers are acquainted with the various technical terms which are employed. If they should not be, I refer them to *Scrambles amongst the Alps*.

[2] The book is published in English, French and German editions, and is entitled *The Hotels of Switzerland*, Basle, 1896. It gives a considerable amount of information, and discusses a variety of topics,—from the reasonableness of wanting hot dishes at night to bringing Monkeys into Hotels. It is said that "Rooms are often considerably soiled and damaged by such uncouth inhabitants."

With the increase in the number of travellers there is also an increase in the number of those *who believe they may bind the hotel-keeper by ordering apartments in advance, without being themselves in any way bound by such an order.*

Hence the efficiency of such orders is diminishing daily, and the landlord is all the less to be blamed if he first attends to the guests that have actually arrived, and refuses to comply with any orders from persons unknown to him, unless recommended by trustworthy parties.

A prepaid reply seems, in a certain measure, to increase the probability of having an order for rooms attended to; it may, according to the more or less definite answer of the landlord, bring about, if not a legal, yet a moral obligation on his part. Still even then it cannot be said to be binding, as an *effectual guarantee is wanting on the part of the traveller* for the fulfilment of the obligation entered into, which alone can give the order the character of an agreement."[1]

Ordering rooms for arrivals early in the Morning.

"If the room has been reserved for a guest overnight in consequence of his order, he should only be charged for it *once; provided* he occupies it only during the day, and places it, by early notice, at the disposal of the landlord for the same evening.

"Should the latter be prevented from disposing of it for the ensuing night, the traveller must, especially during the season or when there is a great rush of visitors, be willing to pay for the room for *two* nights, even though he may not have occupied the room for fully 24 hours."

Landlord's responsibility. Depositing Objects of Value.

"The traveller will do well, in order to avoid losses and disagreeable lawsuits, to follow the advice of guide-books and the request of landlords, *to hand over all valuables to the landlord personally.*"

Payment by Coupons, and preparation of Hotel-bills.

"If payment is to be by coupons, notice to this effect *must* be given *on arrival*. The guest should not be surprised if such payments, especially at the last minute, and in the bustle of leaving, are rejected as insufficient. In this case also the traveller should mind the advice to ask for, and examine, his bill in proper time, and to provide the means for paying it in time also.

"Landlords, on the other hand, should always make out their accounts in good time, and not, as unfortunately happens too often, allow travellers to ask for them repeatedly and in vain. This makes them ill-tempered and distrustful."

Some hotels at Chamonix are open throughout the year, and attempts

[1] To this may be added that in the height of the season, *in Switzerland*, the telegraph is much used, and one not unfrequently arrives *before the telegram*.

are being made to establish 'a winter season.' Snow there is seldom so much as a mètre in depth in winter, though it is not unfrequently 3 to 4 mètres deep at Argentière and le Tour. So little snow fell in 1893-4 that wheeled vehicles were used all through the winter instead of sledges. But the Season at Chamonix may be said to begin with June and to end in September, though the weather is *sometimes* fit for the majority of the excursions that can be made as early as the middle of May and for a little while into October. In 1895, there were a number of visitors by the middle of May, the Tête Noire was open for carriages, and several of the lesser ascents were made. But, usually, tourists thin off at the beginning of October, and by the middle of the month only *habitués* and stragglers are left. Chefs, Portiers and Garçons are seen in unaccustomed places, and even invade the sacred benches 'reserved for travellers'—it is the 'end of the Season.'

EDWARD WHYMPER.

July, 1896.

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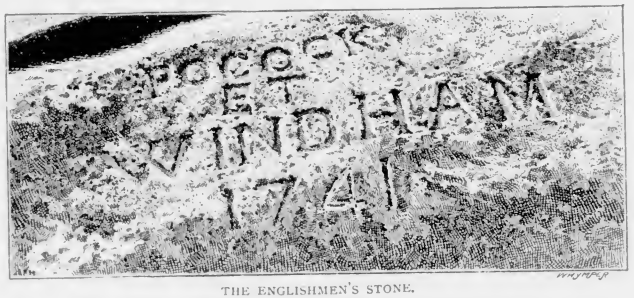
CHAMONIX AND MONT BLANC



THE ENGLISHMEN'S STONE.

CHAPTER I.

ON THE EARLY HISTORY OF CHAMONIX AND MONT BLANC.

FOUNDATION OF LE PRIEURÉ—CHAMONIARDS BOUGHT AND SOLD—HERESY, SORCERY AND CAPITAL PUNISHMENTS—SHARING THE PROCEEDS—PERONETTE CHARGED WITH EATING CHILDREN AT THE SYNAGOGUE—THE PRIORY CHANGES HANDS, AND THE NATIVES BEHAVE VIOLENTLY—CHAMONIX BECOMES ENFRANCHISED, AND THE COMMUNE TAKES POSSESSION—EARLY VISITORS TO CHAMONIX—POCOCKE AND WINDHAM—THE JOURNEY OF PETER MARTEL—THE FIRST INTRODUCTION OF MONT BLANC TO THE WORLD.

THE History of Mont Blanc, though intertwined with that of Chamonix, is not identical with that of the Valley and Village. The name of the Mountain has only been traced back to 1742, and its history commences somewhat later. The Valley, on the other hand, has a history dating from the time of the Norman Conquest. The earliest and almost the only piece of evidence that this region was populated in still more remote times is afforded by an inscribed stone, discovered in 1852, upon the St. Gervais side of the Col de la Forclaz,[1] at a spot called le Larioz; which sets forth that it was a sort of boundary stone placed there in the time of Vespasian.[2] From that period until 1091 nothing is known about the Village or Valley. Then Count Aymon of Geneva bestowed on the Benedictine Abbey of St. Michel de Cluse (near Turin) the whole of what is now called the *Valley of Chamonix*, extending from the Col de Balme to les Houches, and a Priory was established.[3]

1 Sometimes called the Col de la Forclaz de Prarion, to distinguish it from the other Col de la Forclaz between the Tête Noire and Martigny.

2 Figures of this stone are given in Ch. Durier's *Mont Blanc*, Paris, 1877, and in Perrin's *Histoire*, Paris, 1887. A Roman way from Geneva is said to have crossed the Arve a little above Servoz into the Val Montjoie, by the Col de la Forclaz; and probably led by the Col du Bonhomme and Col de la Seigne into the Valley of Aosta.

3 According to M. Charles Durier the text of the Charter or Act of Donation was first *printed* at Lyons in 1660. The original document was discovered by Capt. Markham Sherwill in 1831, at Chamonix. It passed into the possession of M. Bonnefoy of Sallanches.

It is not clear why this gift was bestowed on the Abbey. Count Aymon made over the valley, its lands and inhabitants. Whether he did this for the sake of a consideration, or out of pure benevolence, has yet to be discovered. The foundation of a Priory was a certain indication that there was a population, and, for a mountainous region, it appears that it was not an inconsiderable one. Until recently, through want of research, scarcely anything has been known about the life of these people during the middle ages. Writers upon Chamonix have commonly treated the period as a blank, and have spoken as if the history of Chamonix commenced in the early part of the 18th century. The labours, however, of M. André Perrin have put the matter in an entirely different light. His *History of the Valley and Priory*,[1] based upon the documents[2] collected by M. A. Bonnefoy of Sallanches, gives many interesting details, from which, for the first time, one is enabled to form some idea of the life of the people,—how they were treated, and what they did.

For four centuries the Priors had things their own way, and enjoyed all but absolute jurisdiction; and, under their rule, the inhabitants of the valley cannot have led a very enviable existence, though the treatment they received, so far as we know, was not worse than that which was experienced by their contemporaries in the most civilised parts of the world. There were a certain number of free men,[3] but the greater part were little better than slaves. They were sold or transferred with the land, like cattle; they could not marry without authorisation; and they were occasionally burnt at the stake, for their future benefit, and to the immediate profit of the Priory.[4] Mons. Perrin quotes an instance, in 1283, when Jacques Bonteiller of Servoz *gave* as alms, for the repose of his soul, Nicholas of Chamonix and his descendants to Richard de Villette, then Prior; and says that two years later Léonarde, the widow of Jacques Bouteiller, *sold*

[1] *Histoire de la Vallée et du Prieuré de Chamonix du X^me^ au XVIII^e^ siècle*, par André Perrin, Président de la section de Chambéry du Club alpin français; 8vo, Paris, 1887.

[2] Names which are still family names at Chamonix are frequently found in these old documents. That of Charlet appears so early as 1396; Balmat in 1458; Bossonney in 1468; Comte and Carrier in 1483; and Cachat in 1529.

[3] "Les chartes relatives aux reconnaissances partielles et à la limitation des franchises par les prieurs nous montrent, qu'avant l'établissement du prieuré, les hommes libres habitants le bourg de Chamonix formaient une communauté jouissant de nombreuses et importantes libertés. Des syndics nommés par eux étaient chargés de la représenter, de défendre ses droits en maintenant les bonnes et anciennes coutumes et de prendre toutes les mesures commandées par l'intérêt commun. Ils surent garder intactes leurs libertés malgré les oppositions et les entraves des prieurs et de leurs divers agents. . . Les nombreuses transactions par lesquelles les prieurs reconnurent les usages et les droits du bourg de Chamonix ne furent que des reconnaissances formelles, de libertés immémoriales, accordées à la suite des troubles et des luttes nés des efforts qu'avaient faits les prieurs pour les réduire et les effacer. . . Ces reconnaissances servirent plus tard aux syndics pour sauvegarder les droits de la communauté comme si elles eussent été de véritables chartes de concession de franchises et non plus de confirmation." Perrin's *Histoire*, pp. 71-72.

[4] They were liable to fines for all sorts of offences. For example:—For selling sheep, pigs, calves, or suet without offering for the victualling of the Priory, 60 sous. For sales effected before the victualling was completed, 10 livres. For carrying a sword more than a foot and a half long, 60 sous and to have the weapon taken away. For carrying *bâtons ferrés* more than a foot and a half long, except when travelling, 10 livres and to have the weapon taken away. For refusal to obey the officers of the Prior when in charge of their duty, 25 livres.

Jean, Aimon, and Melioret, sons of Guillaume Bezer of the parish of Chamonix, to the same Richard de Villette for 50 *sous genevois*.

Heresy and sorcery were visited with death. The goods of those who were capitally punished ordinarily went to the Prior, but in the case of heresy they were divided between the Bishop of Geneva, the Prior, and the Inquisitor. M. Perrin refers to the trial of Guiga, widow of Millieret Balmat, *dit* Monard, of Chamonix, and Rolette, widow of Jean Duc of Vallorcine, who with two other women were accused of heresy in 1458, and gives the procedure which was followed. The syndics requested the Prior to assist them, and he nominated a judge, who was accepted. The accused were then taken into the church, and interrogated by Pierre Ginod, inquisitor, who, finding them apostate and impenitent, turned them over to the *chatelain*. He led them outside the barn of the Priory, before the judges and syndics, and demanded their condemnation as heretics. Jacques Bollet, *juge rapporteur*, read out the act of accusation, and then in the name of the other judges and syndics condemned them to death by fire, *dans un feu gros et terrible*, in order that this method of punishment might deter others who were inclined to imitate them. Pierre Ginod, the inquisitor, *sold his share of the proceeds to the Prior, Guillaume de la Ravoire, for fifteen florins.*

In the same year, Jean Corteys, *dit* Martin, was also accused of heresy; and in the following year Henriette, wife of Pierre Oncey, was charged with heresy and idolatry, and was burnt. Three years afterwards, eight were tried, in one batch. Claude Rup, a specialist in heresy for the dioceses of Lausanne, Geneva, and Sion, took them in hand, declared they were heretics, and delivered them over to the secular arm. The *chatelain* again led them into the courtyard of the Priory, 'where it was customary to deliver judgment,' and Jacques Bollet gave judgment against them; and, as they refused to amend their ways, he declared that the whole were to be burnt and all their goods were to be confiscated. Péronette, widow of Michel des Ouches, who, besides heresy, was said to have been guilty of various other crimes, including 'eating children at the synagogue,' was selected for special punishment. She was tied to a post of wood, '*haute et visible*,' sitting on a red-hot, burning iron for the twentieth part of an hour, before the light was applied to the stack, above which she was placed to be burnt; and Jean Grelan, who it is said had 'trampled on the body of Christ and paid hommage to the Devil,' etc., was condemned to be led to the place where he had committed these crimes, or to the nearest place of justice, and after having had his foot cut off was to be brought back, dead or alive, tied to a post and burnt along with his foot.

Centuries of oppression accustomed Chamoniards to this sort of treatment. They were born under it, they endured it, and they accepted the situation, though every now and then there was an outbreak. Towards the end of the thirteenth century, in consequence of successive encroachments of the Priors, they rose in revolt, and carried off the cattle of Richard de Villette,[1] and he only made peace by recognising and confirming their rights in writing. His nine successors

[1] Prior from 1255 to 1296.

ruled on an average 25 years apiece, more or less obnoxiously, and then there came a change.

By a Papal Bull of February 27, 1519, the Priory of Chamonix passed into the hands of the Chapter of the Collegiate Church of St. Jacques at Sallanches, and the natives, for a time, seem to have anticipated that some benefits would accrue to them from the transfer.[1] The Chapter pledged itself to appoint a resident Canon, and to respect the privileges of the inhabitants; but the Chamoniards do not appear to have been satisfied with their treatment, and presently resisted the collection of taxes. At this period they became somewhat turbulent. Two officers who were sent successively to Chamonix were so maltreated that they considered themselves fortunate to escape with their lives. "I have not been able to discover," says M. Perrin, "that any consequences followed." Orders were, however, given to arrest the mutineers, and a certain Chissé de Bontiller was despatched with a numerous train to carry them out. But when he arrived before the Church he was assailed with showers of stones, and, wounded, beat a hasty retreat. Matters continuing like this, the Chamoniards incurred excommunication; but they begged themselves off for three months, in order 'to take the sacrament at Easter,' and then went on as before. The Bailly of Faucigny came in 1535 to publish a proclamation ordering the payment of the obnoxious *dimes*, and the syndics and the inhabitants behaved violently, tore up the proclamation, and drove the Bailly and his men into the Priory. For this outrage several persons were arrested, and led away to prison at Chambery. The dispute still went on, and in 1537 the Seigneur Demarest de Menthon came to Chamonix, accompanied by fifty gentlemen, besides the officers of justice, to see what *he* could do; and he fared no better than the others, for he was hooted at all along the road, and was besieged in the Priory by 400 or 500 armed men, who threw stones and shot with arquebuses through the windows, and blocked every path to prevent the arrival of assistance, crying out that they should be killed, or burnt, or kept prisoners until they died of hunger. In the night one of them was let down through a window, and escaped by the mountains to Sallanches to give the alarm. The tocsin was sounded, and 500 or 600 men marched to relieve the Seigneur, who ultimately was allowed to depart in peace.

This was the commencement of a struggle in which the Chamoniards sought to get free from the exactions and imposts that they had inherited from feudal times, and the struggle continued for more than two centuries. In 1737 they began to aim at completely ridding themselves of their odious burdens by paying down a lump sum, and forty years were spent in haggling what the amount should *be*. In 1780, delegates from the Chapter met others at Chamonix appointed by the community to discuss terms. The Chapter wanted 150,000 livres, and at last came down to 75,000. Not until 1786 was a compromise effected; and then, by the payment of 58,000 livres the valley was delivered from its oppressions, Chamoniards became free

[1] The services had sometimes been neglected. In 1368, the syndics complained bitterly to the Abbé of St. Michel de la Cluse that the Church at Chamonix was not kept up as it ought to be, and spoke of the want of monks.

men,[1] and the Commune took possession of the lands of the Priory.[2] "'On the 30th of October, 1786, the rule of the Priory of Chamonix expired at the stroke of midnight and was buried the next morning, having lasted 696 years. When the French Revolution came, the Chamoniards said, 'Ah! if we had only been able to look into the future, and had waited a few years, we should have been enfranchised without paying anything.'"[3]

The important period embraced by the years when the negotiations for enfranchisement were proceeding coincided with the time at which a stream of outsiders came to view the sights of Chamonix; and it seems probable that through contact and converse with those who enjoyed greater freedom than themselves the Chamoniards were fired with this craving for liberty. From 1741 onwards the stream flowed uninterruptedly and has constantly increased. But at a much earlier date *occasional* strangers came to inspect the Glaciers (or *Glacières*, as they were formerly termed). One of the earliest references to them that is in print will be found in *Les nouvelles œuvres de Monsieur le Pays*, a gentleman who wrote as follows, in a letter dated 'Chamony en Fossigny, le 16 May, 1669,' to a lady with whom he seems at one time to have been on good terms. Upbraiding her for her coolness, he says—

"In my despair at leaving you, I vowed that I would throw myself over the first convenient place. But, until now, though for fifteen days I have ascended and descended the most dangerous mountains in Savoy, and skirted the brinks of a thousand precipices, I have not thrown myself over. . . I must not deceive you. The pleasure of looking at your portrait in this frightful country has always kept me back when I proposed to execute my intention. . . Here, Madame, I see five mountains which are just like you. . . Five mountains, Madame, which are pure ice from top to bottom."[4]

Seventy-four years before the publication of Monsieur le Pays' letter, the name of Chamonix (Chamonis) made its appearance in the great Atlas of Mercator, and it was possibly somewhere about this time (1595) that the village began to be talked about in the outer world.[5] Anyhow, it is clear that it was by no means an unknown

[1] At one sweep, they got rid of "droits de fief, d'emphytéose, de directe, de lods, double lods et du tiers des ventes générales; les services, censes féodales, haut-siège, prémices des montagnes," etc.

[2] This appears to have been a *second* payment, for Bourrit, in his *Description des Glacieres* published in 1773, says that the Chapter of Sallanches formerly had the right to a third of the property of a man who died childless, but that the community had bought up that right for 30,000 livres. In his *Nouvelle Description des Glacieres*, published in 1785, he says that at that time the Curé of the Priory was called guardian (*administrateur*) "because, besides the care of souls, he looked after the property of the Chapter. This double occupation, which, in other countries, is liable to many consequences, has none in this valley, where the ecclesiastical rule is truly paternal. However, the community is at the point of being enfranchised," and he suggests, as a result, that "the clergy, when limited to their proper functions, will become more respected."

[3] The Priory has now disappeared. M. Perrin says that one of the Chapels belonging to it is incorporated in the existing Church, but that the buildings of the Priory were completely destroyed by fire on Dec. 3, 1758. He says further that the present Hotel d'Angleterre stands upon the site of two mills which belonged to the Priory.

[4] Monsieur le Pays apparently refers to the Glaciers of Taconnaz, Bossons, Argentière and Tour, and the Mer de Glace. I quote this passage from the interesting pamphlet by M. Théophile Dufour, to which reference will again be made presently.

[5] For the name is *not* in the Atlas by Mercator in 3 vols., the first volume of which was published at Duisburg in 1585.

place at the end of the 16th century; and this fact, in conjunction with the extracts that have been given from M. Perrin's *Histoire* (which, it should be said, convey a very inadequate idea of the sterling nature of his volume), is sufficient to show that too much stress has been laid upon the 'discovery' of Chamonix by Pococke and Windham in 1741, though their visit, undoubtedly, had the effect of bringing it into greater prominence.

In the year 1740, "there was quite a little colony of English" at Geneva, composed in part of young men who had come there to finish their education. These young fellows appear to have been on good terms with the authorities. They sometimes invited them to private theatricals; and they were themselves invited upon other occasions to appear before the authorities, to account for too great sprightliness (*excès divers*).[1] Amongst them was William Windham, of Felbrigg in Norfolk, who was about three-and-twenty years of age, handsome and tall, known subsequently in London as 'boxing Windham.' "I had," said he,

"long had a great Desire to make this Excursion, but the Difficulty of getting Company had made me defer it: Luckily in the Month of *June* last Dr. *Pococke* arrived at *Geneva* from his Voyages into the *Levant* and *Egypt*, which countries he had visited with great Exactness. I mentioned to him this Curiosity, and my Desire to see it, and he who was far from fearing Hardships, expressing a like Inclination, we immediately agreed to go there; when some others of our Friends found a Party was made, they likewise came into it, and I was commissioned to provide what was necessary for our setting out."

Windham had seen the *Delices de la Suisse*, and the works of Scheuchzer, and through reading these books had learnt something about the *Glacières*. "It is really Pity that so great a Curiosity should be so little known. . . As we were assured on all hands, that we should scarcely find any of the Necessaries of Life in those Parts, we took with us Sumpter Horses, loaded with Provisions, and a Tent, which was of some use to us, though the terrible Description People had given us of the Country was much exaggerated."

They set out on June 19, 1741, a party of eight, "besides five Servants, all of us well arm'd, and our Baggage-Horses attending us, so that we had very much the Air of a Caravan. The first Day we went no farther than *Bonneville*." The next night they slept at Servoz on 'clean straw in a Barn,' and on the third day arrived at Chamonix.

"Here we encamp'd, and while our Dinner was preparing, we inquired of the People of the Place about the *Glacieres*. They shewed us at first the Ends of them which reach into the Valley, and were to be seen from the Village; these appear'd only like white Rocks, or rather like immense Icicles, made by water running down the Mountain. This did not satisfy our Curiosity, and we thought we had come too far to be contented with so small a Matter: we therefore strictly inquired of the Peasants whether we could not by going up the Mountain discover something more worth our Notice. They told us we might, but the greatest Part of them represented the Thing as very difficult and laborious; they told us no-body ever went there but those whose Business it was to search for Crystal, or to shoot *Bouquetins* and *Chamois*, and that all

[1] According to M. Théophile Dufour there are records at Geneva to that effect.

the Travellers, who had been to the *Glacieres* hitherto, had been satisfied with what we had already seen.

The Prior[1] of the Place was a good old Man, who shewed us many Civilities, and endeavoured also to dissuade us; there were others who represented the Thing as mighty easy; but we perceived plainly, that they expected, that after we had bargain'd with them to be our Guides, we should soon tire, and that they should earn their Money with little Trouble. However our Curiosity got the better of these Discouragements, and relying on our Strength and Resolution, we determined to attempt climbing the Mountain. We took with us several Peasants, some to be our Guides, and others to carry Wine and Provisions. These people were so much persuaded that we should never be able to go through with our Task, that they took with them Candles and Instruments to strike Fire, in case we should be overcome with Fatigue, and be obliged to spend the Night on the Mountain. In order to prevent those amongst us who were the most in wind, from fatiguing the rest, by pushing on too fast, we made the following Rules: That no one should go out of his Rank; That he who led the way should go a slow and even Pace: That who ever found himself fatigued, or out of Breath, might call for a Halt; And lastly, that when ever we found a Spring we should drink some of our Wine, mixed with Water, and fill up the Bottles, we had emptied, with Water, to serve us at other Halts where we should find none. These Precautions were so useful to us, that, perhaps, had we not observed them, the Peasants would not have been deceived in their Conjectures.

We set out about Noon, the 22d of *June*, and crossed the *Arve* over a wooden bridge. Most Maps place the *Glacieres* on the same side with *Chamoigny*, but this is a Mistake. We were quickly at the Foot of the Mountain, and began to ascend by a very steep Path through a Wood of Firs and Larche Trees. We made many Halts to refresh ourselves, and take breath, but we kept on at a good Rate. After we had passed the Wood, we came to a kind of Meadow, full of large Stones, and Pieces of Rocks, that were broke off, and fallen down from the Mountain; the Ascent was so steep that we were obliged sometimes to cling to them with our Hands, and make use of Sticks, with sharp Irons at the End, to support ourselves. Our Road lay slant Ways, and we had several Places to cross where the *Avalanches* of Snow were fallen, and had made terrible Havock; there was nothing to be seen but Trees torn up by the Roots, and large Stones, which seemed to lie without any support; every step we set, the Ground gave way, the Snow which was mixed with it made us slip, and had it not been for our Staffs, and our Hands, we must many times have gone down the Precipice. We had an uninterrupted View quite to the Bottom of the Mountain, and the Steepness of the Descent, join'd to the Height where we were, made a View terrible enough to make most People's Heads turn. In short, after climbing with great Labour for four Hours and three Quarters, we got to the Top of the Mountain, from whence we had the Pleasure of beholding Objects of an extraordinary Nature. We were on the Top of a Mountain, which, as well as we could judge, was at least twice as high as Mount *Salève*, from thence we had a full View of the *Glacieres*. I own to you that I am extremely at a Loss how to give a right Idea of it; as I know no one thing which I have ever seen that has the least Resemblance to it.

The Description which Travellers give of the Seas of *Greenland* seems to come the nearest to it. You must imagine your Lake put in Agitation by a strong Wind, and frozen all at once, perhaps even that would not produce the same Appearance.

. . . . . .

Our Curiosity did not stop here, we were resolved to go down upon the Ice; we had about four hundred Yards to go down, the Descent was excessively steep, and all of a dry crumbling Earth, mixt with Gravel, and little loose Stones, which afforded us no firm footing; so that we went down partly

[1] There was no Prior at that time. Windham doubtless supposed that there must be a Prior because there was a Priory.

falling, and partly sliding on our Hands and Knees. At length we got upon the Ice, where our Difficulty ceased, for that was extremely rough, and afforded us good footing: we found in it an infinite number of Cracks, some we could step over, others were several Feet wide. These Cracks were so deep, that we could not even see to the Bottom; those who go in search of Crystal are often lost in them, but their Bodies are generally found in them after some Days, perfectly well preserved. All our Guides assured us, that these Cracks change continually, and that the whole *Glaciere* has a kind of Motion. In going up the Mountain we often heard something like a Clap of Thunder, which, as we were informed by our Guides, was caused by fresh Cracks then making; but as there were none made while we were upon the Ice, we could not determine whether it was that, or *Avalanches* of Snows, or perhaps Rocks falling; though since Travellers observe, that in *Greenland* the Ice cracks with a Noise that resembles Thunder, it might very well be what our Guides told us. As in all Countries of Ignorance People are extremely superstitious, they told us many strange Stories of Witches, &c. who came to play their pranks upon the *Glacieres*, and dance to the Sound of Instruments. We should have been surprised if we had not been entertained in these Parts, with some such idle Legends. The *Bouquetins* go in Herds often to the Number of fifteen or sixteen upon the Ice, we saw none of them; there were some *Chamois* which we shot at, but at too great a Distance to do any Execution.

. . . . . .

Having remained about half an Hour upon the *Glaciere*, and having drank there in Ceremony Admiral Vernon's Health, and Success to the *British* Arms, we climb'd to the Summit, from whence we came, with incredible Difficulty, the Earth giving way at every step we set. From thence, having rested ourselves a few Minutes, we began to descend, and arrived at *Chamouny* just about Sun-set, to the great Astonishment of all the People of the Place, and even of our Guides, who owned to us they thought we should not have gone through with our Undertaking."

Windham went away from Geneva in August, 1742, and on the 20th of that month a company of Genevese, whose curiosity had been raised by reading the account that he had written, started for Chamonix, stimulated by his remarks that "Barometers to measure the Height of the Mountains, portable Thermometers, and a Quadrant to take Heights with, would be useful, if there were a Mathematician in Company," and that "one who understood Drawing might find wherewithal to employ himself, either on the Road, or in the Place itself; in short a Man of Genius might do many things which we have not done." They travelled from Geneva to Sallanches in one day, and on the morrow arrived at Chamonix. The next day was occupied in going to the Montanvert, and on the following morning they returned to Geneva. This party of Genevese was under the leading or direction of a certain Peter Martel, who wrote an account of the journey, which was published in London in 1744.[1] A facsimile, on a reduced scale, of this rare pamphlet is given overleaf.

Mr. Peter Martel termed himself 'Engineer,' and at the end of his pamphlet he stated that he made and sold Pocket and other Thermometers, and until a few years ago this seemed to be all that was known about him in England. His pamphlet contains Windham's account of his proceedings (in the form of a letter to a friend), and Martel's account of his own journey, in the form of a letter to Windham; and it is expressly stated that both letters were *translated*

[1] It will be noticed that on the title-page it is said 'As laid before the Royal Society,' but it does not appear that the Society printed the communication.

An ACCOUNT of the

GLACIERES

OR

ICE ALPS

IN

SAVOY,

In TWO LETTERS,

One from an

Engliſh Gentleman to his Friend at *Geneva*;

The other from

PETER MARTEL, Engineer,
to the ſaid *Engliſh* Gntleman.

Illuſtrated with a MAP, and two Views of the PLACE, *&c.*

As laid before the ROYAL SOCIETY.

LONDON,

Printed for PETER MARTEL,

And Sold by *W. Meadows* in *Cornhill*; *P. Vaillant* in the *Strand*; *G. Hawkins* between the *Two Temple Gates*; *R. Dodſley* in *Pall Mall*; *J. Pallaret* againſt *Catherine Street* in the *Strand*; and *M. Cooper* in *Paſter Noſter Row*. MDCCXLIV.

(Price One Shilling and Six-pence.)

from the French. No French version was, however, known until Mons. Théophile Dufour published one in the *Echo des Alpes* in 1879,[1] prefaced by various well-authenticated details relating to the persons in question. M. Dufour makes it clear that Mr. Windham *published* nothing. He wrote a letter, giving an account of his proceedings, to Jaques-Antoine Arland, a portrait-painter living in Geneva, *at the desire of the latter*. Arland allowed the letter to be circulated, and the original, or a copy of it, was seen by Martel. Peter Martel's letter to Windham was also circulated in manuscript at Geneva, and both letters were seen by Mons. Baulacre (who is termed by De Saussure 'savant Bibliothécaire de notre ville'). This gentleman was in the habit of writing to the papers, and, in May and June, 1743, he sent two letters to the *Journal helvétique* of Neuchâtel, the first of which commenced thus:—

"Sir—You have heard that one has seen at Geneva, in the last year or two, some manuscript accounts of different travellers who have had the curiosity to go to examine, in Faucigny, the part of the Alps that is called the *glacières*. . . You ask me to copy the two different accounts which have appeared in our town. There would be a good deal to copy; I am rather lazy and I have no secretary at my disposal. You will be content then, if you please, with a sort of *résumé* of these two manuscripts. I shall try to melt the whole down, and to send you the essence."

Such was the manner in which the public first became informed of these two journeys. The melted or boiled-down version of the lazy Baulacre was the only account published *in French* until the appearance of M. Théophile Dufour's pamphlet in 1879. In this he gives the entire contents of Windham and Martel's two accounts, printed from one of the MS. copies that were in circulation at Geneva in the time of Baulacre, which has been discovered at Paris, in the Library of the Institute.

Researches by M. Dufour have elicited facts relating to Peter Martel. It appears that he was born in 1701 or 1702, and was the son of a French refugee, a shoemaker, who settled at Geneva at the beginning of the 18th century. Two references to the son have been discovered in the Reg. du Conseil of Geneva, both of which are to his credit;[2] and it has also been found out, from documents which are in existence at Geneva, that he ultimately went to Jamaica and died there in 1761.

If the manuscript versions of Windham and Martel's relations which have been printed by M. Dufour were exact transcripts of the original letters, the English translations (of 1744) are very free

[1] WILLIAM WINDHAM ET PIERRE MARTEL. Relations de leurs deux voyages aux Glaciers de Chamonix (1741-1742). Texte original Français publié pour la première fois avec une introduction et des notes par Théophile Dufour, Président de la Cour de justice de Genève, Directeur des Archives de l'Etat. Geneva, 1879.

[2] At Feb. 19, 1723, there is this entry. "*Gratification à Martel, pour sa machine.*—Monsieur le sindic de la garde a fait voir au Conseil un planisfère, avec un bord d'environ demi-pied de hauteur, rempli de nombre de cercles et de machines qui représentent le monvement des planètes, selon les différens systèmes de Ptolemée et de Copernic, composé par un jeune homme nommé Martel, fils d'un cordonnier, qui a beaucoup de talent pour le dessein et pour la mécanique, dont il a fait présent à la Bibliothèque. Sur quoi étant opiné, l'avis a été de lui faire une gratification de dix louis d'or pour l'encourager."

translations. The deviations from the French are frequent, and there are additions and omissions. These differences are not of a nature to be attributed to printers' 'devils,' or compositors. Although very numerous, they are of little importance so far as facts are concerned.

The principal interest of the two narratives lies in the information they afford about the condition of Chamonix and the Chamoniards a century and a half ago. It appears that at that time, although it was customary for visitors to do little more than inspect the ends of the glaciers, there were already Guides and Porters. There was a prevalent rumour that the glaciers were increasing. Windham says he was told by his Guides "that in the time of their Fathers the *Glaciere*" (that is the Mer de Glace) "was but small, and that there was even a Passage thro' these Valleys, by which they could go into the *Val d'Aoste* in six hours." But throughout the whole of his account there is no mention of Mont Blanc, and an omission so strange makes one conjecture that it must have been invisible during his stay. Peter Martel, however, mentions Mont Blanc four times. In the English pamphlet, at p. 16, he refers to "the Mountain called *Mont blanc*"; on pp. 17 and 19 he calls it "the *Mont Blanc*"; and upon p. 22 he says "*Mont Blanc*, which is supposed to be the Heighest in all the *Glacieres*, and perhaps of all the *Alps*. Many Persons of the Country who have travelled assured me, that they had seen it from *Dijon*, and others from *Langres*, which is 135 Miles distance."

I have been unable to learn that the name Mont Blanc has been printed at an earlier date. It would seem therefore, under any circumstances, that it came into use somewhere about the time of Martel's visit. Possibly, it was invented to satisfy inquisitive visitors demanding 'what do you call this?' and 'what do you call that?' Some of the Aiguilles had been christened already. The Dru, the Charmoz (Charmeaux), the Blaitière (Blaiterie), and Mont Mallet (Mallay) were established names in 1742; and I imagine that, perhaps, when Martel pursued his inquiries, and pointing to the great snowy dome demanded 'and what do you call that?' the Chamoniards replied simply, "Oh! we call that the white mountain," without intending him to suppose that this was an established appellation. Down went Mont Blanc in his notes, and the name has stuck to the mountain ever since.

However this may be, Martel was the first to use the name on a map.[1] The shoemaker's son had the honour to introduce Mont Blanc to the world, and the fame of the Great White Mountain soon spread abroad.

[1] M. André Perrin says in his *Histoire* (at p. 6) that Bourrit was the first to give the name Mont Blanc *on a map* (the map in his *Nouvelle Description des Glacieres et Glaciers de Savoye*, published in 1785). This is incorrect. Martel gave it forty-one years earlier on the Map (Plate II) that accompanies his pamphlet.

CHAPTER II.

THE EARLIEST ATTEMPTS TO ASCEND MONT BLANC.

THE *GLACIÈRES* BECOME FAMOUS—HORACE BENEDICT DE SAUSSURE—WONDERFUL EFFECT OF FAITH—DE SAUSSURE'S REWARD—FIRST ATTEMPTS TO ASCEND MONT BLANC—THE NATIVES COMPLAIN OF TOO MUCH HEAT—MARC BOURRIT TRIES THE ST. GERVAIS SIDE—SOME OF HIS PEOPLE GET TO THE FOOT OF THE BOSSES DU DROMADAIRE—JOINT EXPEDITION OF BOURRIT AND DE SAUSSURE—A RACE FOR THE SUMMIT DECIDED IN FAVOUR OF CHAMONIX.

CHAMONIX speedily benefited from the publicity which was given to it by the circulation of Windham and Martel's letters. It soon became the *fashion* to visit the *Glacières*.

Amongst those who went there was a young man named Horace Benedict de Saussure. He belonged to an old Swiss family,[1] settled a few miles from Geneva, at a place called Genthod. Whenever he walked abroad, the Great White Mountain must have caught his eye, on the opposite side of the lake. De Saussure was a man of studious habits, and at the early age of twenty-two became Professor of Philosophy at the Academy of Geneva. "As for me," he says in his *Travels*,[2] "I had from my infancy a most decided *passion* for mountains. In 1760, I went alone and on foot to visit the Glaciers of Chamonix. I returned again the next season, and since then I have not allowed a year to pass without making journeys amongst mountains for the sake of study."

He said that so early as 1760 and 1761 he had it proclaimed in the three parishes of the valley of Chamonix that he would give a considerable reward to anyone who should discover a practicable way

[1] Horace Benedict de Saussure was born in 1740. The De Saussures trace their descent from Mongin de Savssvre, Escuyer, Seigneur de Dompmartin and de Monteul sous la ville d'Amance en Lorraine, who in 1475 was attached to the Court of René, King of Sicily and Jerusalem. His son, Antoine de Saussure, succeeded to his offices and dignities; but in 1551 became Protestant, was imprisoned and deprived of his possessions, and retired to Metz in 1552. He was ejected from Metz, and then went with his family of twelve children successively to Strasburg, Neuchâtel, and Geneva, and finally settled at Lausanne in 1556. He died in 1569. Horace Benedict de Saussure was the only son of an only son, and was eighth in a direct line from Mongin de Savssvre. I take these facts from a family tree, communicated to me by Mons. F. Henri L. de Saussure, grandson of Horace Benedict de Saussure.

[2] *Voyages dans les Alpes*, 4 vols. 4to, Neuchâtel.

to the top of the Great White Mountain, and that he would even pay for their time if their attempts were unsuccessful.[1] It does not appear, from aught we know, that anyone even contemplated the ascent of Mont Blanc before this reward was offered; or that any of the peaks of Mont Blanc had been ascended at that time, or that the Chamoniards in general were entitled to be considered mountaineers; though long before the visit of Windham they were acquainted with some of the peculiarities of glaciers, as they well might be, inasmuch as the glaciers come almost to their doors. From the following passage, taken from the *Life* of Jean d'Arathon d'Alex, published at Lyons in 1767, it is obvious they knew that glaciers sometimes advance and sometimes retreat.

"The inhabitants of a parish called Chamounix shewed in a remarkable manner the confidence they put in the blessing of their Bishop. Chamounix is upon the frontiers of the Valais, having great mountains laden with snow and ice, in summer as well as in winter: their height seems to carry their tops to the skies, and they rise almost as far as the sight can reach; and the snow and ice, continually inclining downwards, threaten to ruin the surrounding localities. As often as the Bishop visited this region, the people begged him to exorcize and to bless these icy mountains. About five years before his death[2] they sent a deputation to beg him to come once more, offering to pay his expenses, and assuring him that since his last visit the *glacières* had retreated more than eighty paces. The Bishop, delighted at their faith, replied, 'Yes, my good friends, I will come to add my prayers to yours.' He went. . . I have a declaration," says the writer, "made on oath by the most notable persons of those parts, in which it is sworn that since this benediction by Jean d'Arathon, the *glacières* have retreated, to such an extent that they are now an eighth of a league from the places where they were formerly."[3]

They knew also that persons lost upon and swallowed up by glaciers might be exhumed in the course of time, in the natural order of things. Windham says that when he got upon the ice (of the Mer de Glace) he found an infinite number of cracks (crevasses). "These Cracks were so deep that we could not even see to the Bottom; those who go in search of Crystal are often lost in them, but their Bodies are generally found again after some days, perfectly well preserved. All our Guides assured us, that these Cracks change continually, and that the whole *Glacier* has a kind of Motion."

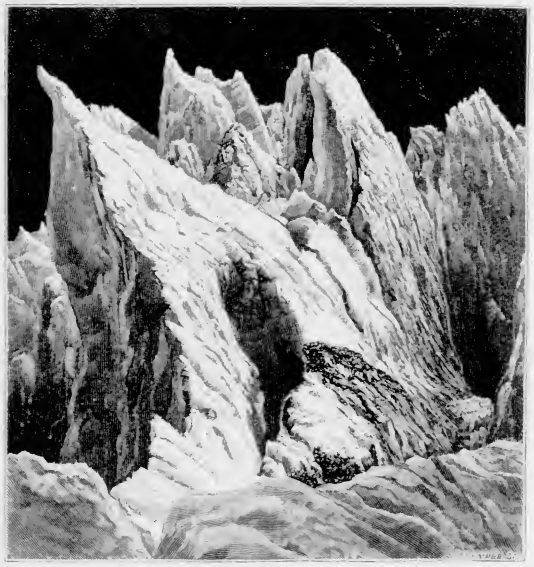
This passage from Windham shews that earlier than his time there were some who ventured upon, or higher than the glaciers, and were more or less mountaineers. The majority of the Chamoniards, however, do not appear to have been very advanced in mountain-craft; for, when Windham proposed to go to the Montanvert, "the greatest

[1] 'Lorsque j'écrivois le discours préliminaire et la premiere partie de cet ouvrage, j'envisageois la cime du Mont-Blanc comme absolument inaccessible. Dans mes premieres courses à Chamouni, en 1760 & 1761, j'avois fait publier dans toutes les paroisses de la vallée, que je donnerois une récompense assez considérable à ceux qui trouveroient une route praticable pour y parvenir. J'avois même promis de payer les journées de ceux qui feroient des tentatives infructueuses." De Saussure, § 1102.

[2] Jean d'Arathon d'Alex was Bishop of Geneva from 1660 to 1695, and died in the latter year.

[3] Quoted from *Oscillations des quatre grands Glaciers de la Vallée de Chamonix*, par Venance Payot, Genève, 1879.

Part of them represented the Thing as very difficult and laborious;[1] they told us that no-body ever went there but those whose Business it was to search for Crystal, or to shoot *Bouquetins* and *Chamois*," and this although there was *a path*. Therefore, one can hardly wonder



ON THE MER DE GLACE.

that De Saussure's offer did not produce immediate results. A few feeble attempts were made, which gave no promise of ultimate success.[2] It was not indeed until 1775, fifteen years after the reward was offered, that four peasants[3] made what may be called the first serious attempt to ascend the mountain. They commenced by scaling the long buttress which is called the Montagne de la Côte, and got some

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distance up the glacier above—how high is not known. They seem to have been discouraged by finding that they could not go up and down again *in one day*, and they deemed it indispensable to make the ascent in a single day, considering that it was too hazardous to pass a night amid the snows. The peasants of Chamonix, at that time, were indeed almost entirely unacquainted with the snows and glaciers of the upper regions, although they had for a number of years conducted visitors over the *lower* portions of the Mer de Glace, and perhaps over some other of the glaciers.[1]

Eight years elapsed before there was another attempt, and then (in 1783) three others[2] tried the same way; and, in order to have as much time as possible, passed a night on the *top* of the Montagne de la Côte. At daybreak they took to the glacier, and reached a considerable elevation, but when they were at their highest point the strongest and most vigorous of the three was seized with an overpowering desire to go to sleep, and begged the others to go on without him. But they would neither do that nor let him go to sleep, and in the end they gave up the enterprise and came down to Chamonix. The great heat which occurs upon glaciers in fine weather seems to have surprised these peasants, and they seem also to have been influenced by the superstition, which still prevails in many parts of the Alps, that it is fatal to give way to sleep when at great elevations. In this case it appeared that they apprehended their companion would be killed by sunstroke. De Saussure said after this attempt in 1783, "from the information they gave, I regarded success quite impossible; and that also was the opinion of the best men in Chamonix." He remarked that even if this sleepy episode had not stopped these fine fellows (*ces braves gens*) "it is very likely they would not have got to the top, for they had still a long way to go, and the heat was exceedingly trying,—an astonishing fact at such an elevation." They made much of the heat when they returned, and Jorasse seriously told De Saussure that it was useless to carry provisions, and that if he went back again the same way he would only take a parasol and a bottle of smelling salts. "When

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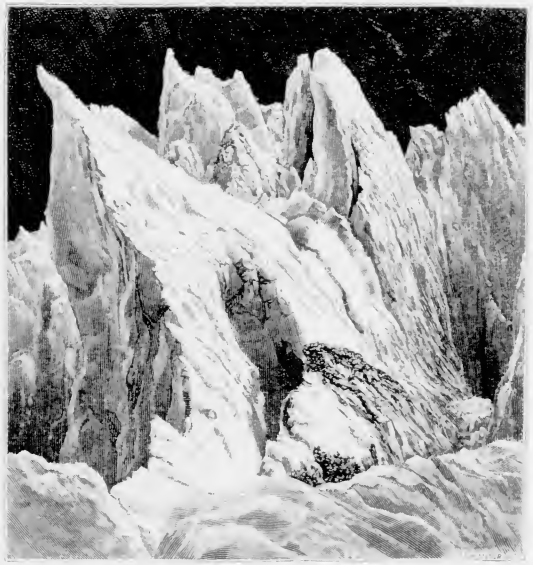

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I picture to myself," said the Professor, "this big and robust mountaineer scaling the snows, holding a little parasol in one hand and a bottle of smelling salts in the other, nothing gives me a better idea of the difficulty of this undertaking, and its absolute impossibility to people who have neither the heads nor the limbs of a good Chamouni guide." They came back, Bourrit says, with swollen lips and dilapidated skins. These are some of the trifles, mentioned incidentally, which shew that the Chamoniards at this period were quite unaccustomed to get to considerable elevations either on snow or rock; for if they had been in the habit of doing so they would have been familiar with the fact that a considerable degree of heat is often experienced (in the sun) at great heights, and that it is by no means phenomenal to lose the skin of one's nose, or to get swollen lips.

Shortly afterwards, at some unknown date, the Monsieur Bourrit (who has been already mentioned several times) endeavoured to follow in the steps of Couttet, 'Jorasse,' and Carrier. Monsieur Marc Bourrit was born in 1735. He was an artist, and Precentor of the Cathedral Church of Geneva, who visited Chamonix and its surroundings somewhat frequently, and wrote several books upon his excursions. His intentions were better than his execution; and as a mountaineer he was not a success, though he considered that he had taken an important part in developing the guides of Chamonix.[1] At some unknown date in 1783 he arrived on the top of the Montagne de la Côte, and after having passed the night in the open air, found himself, at five o'clock in the morning, "in the region of snow and ice. It was everywhere cut up by horrible crevasses. . . I saw my companions opening up a way with their bâtons and hatchets, become all at once invisible, then reappear on pyramidal blocks; descend into labyrinths from which they could hardly escape, escalading walls forty feet high. . . When I was about to follow in their track, I saw a cloud growing round the summit of Mont Blanc, and descending upon us. This sudden phenomenon alarmed me; I called to my companions," and he bolted down to Chamonix as hard as he could go.

Somehow or other, M. Bourrit acquired the notion that an ascent might be more easily made by mounting from the side of the Glacier de Bionnassay, and then by following the ridge leading towards the summit from the Aiguille de Goûter through the Dôme du Goûter, than by ascending from the valley of Chamonix; and, learning that two Chasseurs had actually got to some height upon the Bionnassay side, he found them out and persuaded them to take him in tow. *They* started in September, 1784, but the weather was cold, Monsieur Bourrit could not stand it, and did not even reach the ridge; though two of his men did, and they followed it, they said, until they came to the foot of the two snowy humps, which are now called the Bosses du Dromadaire. Time ran short, and they came down, like all the rest, without having reached the summit.

[1] "Les uns se sont formés d'eux mêmes en allant à la recherche du cristal et à la chasse des chamois; d'autres doivent leurs connoissances à M. de Saussure et à moi; non seulement nous nous en sommes fait accompagner sur la mer de glace et les sommités voisines, mais encore dans des voyages lointains en Piémont, en Vallais, dans les montagnes de la Suisse et celles du Milanois."

De Saussure heard of this, and, with the concurrence of Bourrit, had a little hut built high up on the Bionnassay side, in order that they might start from a high level. In September, 1785, they went to it, and essayed to follow the route which had been struck out the year before. But he failed even to reach the ridge. His hut was too low down; the attempt was made too late in the year; and they went back to Geneva without having accomplished any advance.

This was the first occasion that De Saussure had set foot on the mountain, and his presence on the spot probably stimulated the natives. Moreover, he shewed that he was in earnest by giving instructions to have another hut constructed, considerably higher up. He was convinced that if the summit should ever be attained it would be from that direction. The peasants of Chamonix did not, however, all share this opinion. Some were in favour of the Bionnassay side, and others espoused the valley route, and they took to betting on the subject. It was arranged that some of them should start from one side and some from the other, to see who would arrive first at the foot of the final peak. They started on June 30, 1786. Three came up from the back, and three others went *viâ* the Montagne de la Côte, and these latter arrived at the rendezvous long before the others. There was still time to spare, and they attempted to complete the ascent by following the ridge, but found that the ridge was too much for them. Just below the Bosses du Dromadaire it becomes narrow and steep, and requires the use of the ice-axe, with which the peasants of Chamonix at that time were scarcely acquainted; and so they turned to come down, convinced that it was *quite impossible* to complete the ascent by that way. This brings us down to the time when the first ascent of the Great White Mountain (le Grand Mont Blanc) was effected.

IN FRONT OF CHAMONIX CHURCH.

CHAPTER III.

THE FIRST ASCENT OF THE GREAT WHITE MOUNTAIN.

JACQUES BALMAT DISCOVERS THE *ANCIEN PASSAGE* AND NEARLY REACHES THE SUMMIT—DR. PACCARD AND BALMAT MAKE THE FIRST ASCENT—DE SAUSSURE GIVES INSTRUCTIONS TO LEVEL THE WAY—RECRIMINATIONS—WHO IS THIS DR. PACCARD?

ALONG with the three who it has been mentioned ascended from the valley of Chamonix, there was a fourth, who attached himself to the others almost against their will—a young man named Jacques Balmat. Just before they started, he is said to have passed a couple of days in searching for a route upon his own account, and he was returning, with his clothes sticking to him half frozen, when he met the others ascending. They were unwilling that he should accompany them. *They* wanted the reward, and so did *he*. But he went with them, and when the others turned back, he lingered behind to look about, and they went on, it is said, and deserted him intentionally. "Balmat is lively," said the others ironically, "and will catch us up." "I found myself alone," said he, "and was divided between a wish to rejoin them, and an ambition to attempt the ascent alone. I was piqued at being left behind, and something told me that, this

time, I should succeed." He decided on the latter course; descended on to a great snowy plain that is about 2600 feet below the summit (the Grand Plateau), and remounted by the exceedingly steep snow which is on the right of the engraving on p. 20,[1] digging out footsteps with the point of his bâton, until high enough to see all the rest of the way clear to the top. "It wasn't either easy or amusing, I can tell you, to be hung up so to speak on one leg, with an abyss underneath, and obliged to fashion this sort of staircase. But at last I got to the Rocher Rouge.[2] Oh! I am there, I said. There was nothing further to hinder one—no more steps to make." Night was approaching, there were clouds about, and he did not try to go to the top—less from fear of losing himself than from the conviction that he would not be seen, and that no one would believe he had been there. He came down again the same way, but on arriving at the Grand Plateau was nearly blind. "The snow had so affected my eyes that I couldn't see anything. I sat down, closed my eyes, and put my head between my hands. At the end of half an hour sight came back, but night had come. I hadn't taken two hundred steps when I felt with my bâton that the snow was giving way under my feet. I was on the edge of the great crevasse which we had crossed in the morning by a snow-bridge. I sought for it and couldn't find it. Something had to be done. I put my knapsack on the snow, tied my handkerchief round my face, and prepared to pass the night as well as I could. From the place where I was I saw the lights of Chamonix,[3] where my comrades were sitting cosily round the fire, or, it may be, were in their beds. Perhaps none of them gave a thought of me; or, if he did, it would be only to say, when stirring up the embers or drawing the counterpane over the ears, 'Just now that fool of a Jacques is beating his feet to keep them warm.'" Next morning he returned alone to his village. "All was right at home. My wife gave me something to eat, though I was more sleepy than hungry. She wanted me to go to bed in my room, but I was afraid of being tormented by the flies; so, shutting myself up in the barn, I laid down upon the hay, and slept twenty-four hours without waking."

Balmat, at this time, was twenty-four years old, and though so young had already made two attempts to ascend Mont Blanc. Once he had passed a night on the top of the Montagne de la Côte, and on the next day reached the Grand Plateau, *alone*. He had now done a more notable thing, but still did not awake to find himself famous; for no one, not even his wife, knew the information he had gained. If he divulged it, he could not hope to profit. Hence, "upon return to Chamonix, at first he kept his discovery a secret. But as he understood that Dr. Paccard was thinking of making some attempts on the mountain he communicated his secret to him, and offered to act as his guide" to the summit. So says De Saussure

[1] This is now termed the '*ancien passage*' (*i.e.* the old way).

[2] The Rocher Rouge is the great cliff seen in the engraving on p. 20. Its situation in relation to the summit will be understood by reference to the large engraving of Mont Blanc from the Brevent.

[3] It is to be remarked, however, that Chamonix cannot be seen from the Grand Plateau.

DR. JANSSEN'S HUT

THE ROCHERS ROUGES AND THE "ANCIEN PASSAGE."

in Vol. IV. of his *Voyages*. Paccard, the Village Doctor, was known to Chamoniards as a mountaineering amateur, and in 1786 was about thirty-four years of age. Though he might be little service as a companion, he could be useful as a witness. Paccard agreed to go. Then three weeks of bad weather intervened; but at last, on August 8, 1786, it seemed fine enough to start. "All our little matters having been arranged," said Balmat,[1] "and good-bye said to our wives, we set out about five in the afternoon, one taking the right and the other the left bank of the River Arve, in order that no one should guess what we were about, and we rejoined each other at the village of La Côte." They camped at the top of the Montagne de la Côte (the long buttress which is seen in the engraving on p. 25, extending from the valley towards the summit), about 5500 feet above Chamonix. So far there was no difficulty. "I slept like a top," said Balmat, "until about half-past one," and then awoke the doctor. "The sun arose cloudless, bright and shining, promising us a grand day."

The top of the Montagne de la Côte abuts on the glaciers which extend continuously to the summit of Mont Blanc. The Glacier de Taconnaz descends on its right and the Glacier des Bossons on its left, and at the place where they separate the ice is extremely fissured and difficult to traverse. Balmat made no fuss about this. "In a quarter of an hour," said he, "we took to the Glacier de Taconnaz. The first steps of the doctor were rather unsteady, but seeing how I managed he gained confidence. We soon left the Grands Mulets behind us.[2] I pointed out the place where I had passed my first night. He made a significant grimace, and held his tongue for ten minutes, then said all at once, 'Do you think, Balmat, that we shall get to the top to-day?' I promised nothing. For two hours more we continued to ascend in the same way. After the (Grand) Plateau, the wind rose, and grew higher and higher. At last, on arriving where the rocks which we called the Petit Mulet[3] peep out, a violent gust carried away the doctor's hat. I saw it scuttling away, while he looked after it with outstretched arms. 'Oh! Doctor,' I said, 'you will have to go into mourning; you'll see it no more. It's off to Piedmont. Good-bye!'

"I had hardly shut my mouth when there came such a squall as made us lie flat on our stomachs, and for ten minutes we couldn't get up again. The doctor was discouraged. As for me, just then I was thinking only about the shop-keeper who ought to be looking out for us,[4] and I stood up at the first opportunity, but the doctor

[1] The account that follows of the ascent with Paccard is principally taken from the relation of it which was given by Balmat to Alexandre Dumas in 1832, forty-six years after the event.

[2] The Grands Mulets is the name given to the first little group of Aiguilles which appear through the ice, above the Montagne de la Côte. They are at the left-hand bottom corner of the engraving, Mont Blanc from the Brevent.

[3] Balmat disposes of the greater part of the ascent in half-a-dozen lines. The Petits Mulets (as the rocks to which he refers are now termed) are a small patch only 350 feet below the summit, 600 feet above the top of the Rochers Rouges, and about 5300 feet above the Grands Mulets.

[4] Before leaving Chamonix, they had told a *marchande de sirop* to look out for them, near the top of the mountain, at a certain time.

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would only follow on all fours. In this fashion we came to a place where the village could be seen; I got out my glass, and twelve thousand feet below in the valley made out our gossip, and a crowd of others looking at us through telescopes. Considerations of self-respect influenced the doctor to get on his legs, and the moment he was up they recognised us, he in his big frock-coat and I in my regular dress. Down below they waved their hats, and I replied with mine.

"Paccard had used up his strength in getting on his legs, and neither the encouragement we received nor that which I gave him made him continue upwards. After I had exhausted all my eloquence and saw that I was only losing time, I told him to keep in movement and as warm as possible. He listened without hearing, and answered 'Yes, yes,' to get rid of me. He was suffering from the cold, and I myself was benumbed. I went off by myself, saying that I would come back to look for him. 'Yes, yes,' he replied. I recommended him again not to keep still; but I had not gone thirty steps, when, on looking round, I saw that, instead of running about and beating his feet to keep them alive, he was sitting with his back to the wind.

"From this time the way did not present any particular difficulty, but, as I got higher, the air became less and less fit to breathe. Every ten steps I was obliged to stop. It seemed as if I had an empty chest and no lungs, and the cold laid hold of me more and more. I went on, with face lowered, but presently, not knowing where I was, raised my head and saw that at last I was on the summit of Mont Blanc. Looking around, trembling lest I was mistaken, and should see some fresh aiguille or new point which I should not have strength to scale, the joints of my legs only seemed to hold together by the help of my trousers. But no! no! I was at the end of my journey. I was where no one had ever been before. Then I turned towards Chamonix, waving my hat at the end of my bâton, and saw through my glass that they answered me.

"When this exciting moment was over, I thought of my poor doctor; and, descending to him as quickly as possible, called him by name—quite frightened not to hear him answer. At the end of a quarter of an hour I saw him from afar, round as a ball, not moving, notwithstanding the shouts which he certainly must have heard. I found him doubled up with his head between his knees, like a cat making itself into a muff. I slapped him on the shoulder, and he mechanically raised his head. I told him that I had reached the summit of Mont Blanc, but that appeared to interest him very little, for he only answered by inquiring where he could lie down and go to sleep. I told him that he had come on purpose to go to the top of the mountain, and that he must go there. I shook him, took him by the shoulders, and made him go a few steps; but he appeared stupefied, and as if it were all the same whether he went one way or another, either up or down. However, the exercise I compelled him to take restored his circulation somewhat, and he asked if I hadn't by chance another pair of gloves in my pocket like those which were on my hands. They were of hareskin and had been made

expressly for the occasion, without divisions between the fingers. In a similar situation, I would have refused *both* to my brother, but I gave him *one*. Soon after six we were on the summit of Mont Blanc.

. . . . . .

"Seven o'clock came; there were only two hours and a half more of daylight; it was time to be off. I caught Paccard again under the arm, waved my hat as a last signal to those below, and we began to go down. There was no track to direct us except the little holes which had been made with the points of our iron-shod bâtons. Paccard was no better than a child, without will or energy, whom I guided over the good bits and carried over the bad ones. Night began to close in when we crossed the big crevasse, and caught us below the Grand Plateau. Paccard stopped every moment, declaring that he could go no farther, and I was obliged to compel him to go forward, not by persuasion but by force. At eleven o'clock we got out of the ice-world, and set foot on *terra firma*."

They had now got back to the top of the Montagne de la Côte. Balmat remarked here that the doctor made no use of his hands, and found that he had lost sensation in them. "I drew off his gloves; his hands were white, and as if dead." One of Balmat's own hands was in a similar state.

"I told him that there were three frost-bitten hands between the two of us, but he only wanted to lie down and go to sleep, though he told me to rub my hand with snow. The remedy wasn't far off. I commenced on him, and finished on myself. Presently the blood came back, and with it warmth, but with the most exquisite pain. . . I rolled up my doll in the rug, put him under shelter of a rock, we ate a bit, drank a drop, pressed one against the other as close as we could, and went to sleep."

Next morning the doctor was snow-blind, and was led down holding on to a strap of his guide's knapsack; and Balmat said that he himself was unrecognisable. "I had red eyes, a black face, and blue ears." Four days afterwards he left for Geneva to announce his success.

But before Balmat and Paccard came back, a special messenger was already on his way to Geneva, sent by a sharp innkeeper, who hoped to secure the patronage of De Saussure. The reply which came from the Professor is an interesting document. It commenced thus:

"I am very much obliged to you, my dear Jean-Pierre, for sending an express to inform me of the happy result of Dr. Paccard's expedition. I was so delighted at the news that I gave two new crowns to the messenger. . .

"Now, I am going to tell you something that you must keep a profound secret, and this is that I myself wish to try the same route; not that I flatter myself I shall get to the top, for I have neither the youth nor the agility of Monsieur the Doctor; but I may get, anyhow, to a considerable elevation, and make there some observations and experiments which will be very important to me. Now, as it appears that it is very troublesome to get across the glacier which is above the Montagne de la Côte, I wish you to send at once five or six men to level the way, so far as such a thing is possible. You will give them good wages. . . You can put at their head this Jacques Balmat, who made the journey with Monsieur Paccard, and give him higher pay."

And then, after various other directions, comes this curious passage. "But, in all this, I expressly forbid you to mention my name: say that all this has been ordered by an Italian nobleman, who does not wish to be known. I have the strongest reasons for wanting not to be talked about, and that no one shall know I have got this idea in my head." What these reasons were we do not know. He came to Chamonix a week after writing the letter,[1] but bad weather set in, and another *year* passed before De Saussure stood on the summit of Mont Blanc. On August 1, 1787, he set out with seventeen men led by Jacques Balmat, and passed the first night on the top of the Montagne de la Côte, the next under tent near the edge of the Grand Plateau, and upon August 3, at 11 a.m., "I enjoyed," he said, "the pleasure of the accomplishment of the project which I had planned twenty-seven years before, namely, upon my first journey to Chamonix in 1760—a project which I had often abandoned and taken up again, which was a constant matter of care and anxiety to my family."

In the book by M. de Saussure a plate of Mont Blanc is given, with his track marked thereon; and, although this plate inaccurately represents the mountain, one can tell from it where he went, and the route that was first of all discovered by Balmat, which was subsequently followed by Balmat and Paccard.[2] The opinion of De Saussure (printed nine years after his ascent) was that this route was "very certainly the only one by which the summit could be gained." In this he was mistaken—the mountain has, since then, been ascended from half-a-dozen different directions. But the route taken on the first ascent is the most direct of all, and, in some respects, is the most natural one.[3]

An episode relating to Jacques Balmat remains to be mentioned, which appears to have been overlooked or ignored by writers on Mont Blanc. In the number of the *Journal de Lausanne* for February 24, 1787, an anonymous article appeared questioning the accuracy of the account of the ascent which was generally received. It claimed that Paccard had discovered the route which was followed; it stated that he had 'selected' Jacques Balmat to accompany him, and had done so merely because the other guides were away and he was the only one unoccupied; and that he was selected not as a *guide* but as a

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[2] The engraving on p. 25 is a reproduction of this plate.

[3] The first route has been improved upon, and to some extent has been superseded. The usual course is to proceed from Chamonix (3445 feet) to the Pierre Pointue (6723). So far there is a mule path. From the Pierre Pointue to the spot called Pierre l'Echelle (7910), at the edge of the right bank of the Glacier des Bossons, there is a rough path. The Glacier des Bossons is then crossed to the rocks called the Grands Mulets (10,113), and there the original route is taken up, and followed so far as the Grand Plateau (about 12,900). Balmat's route is then departed from, and there are two ways, which are used about equally—one by the ridge of the Bosses, and the other by what is termed 'the Corridor'—a steep bank of glacier leading from a break in the Mont Maudit ridge down to the Grand Plateau. Those who ascend by the latter way take up Balmat's route again upon reaching the top of the Rochers Rouges.

VIEW OF MONT BLANC, SHEWING THE ROUTE TAKEN BY DE SAUSSURE IN 1787.

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workman. "*He* was guided," said this anonymous communication, "and encouraged by M. Paccard. Paccard pressed him to go on when he wanted to turn back. Balmat was useful to him, doubtless, but not in attaining the summit. . . Balmat did *not* get there the first—M. Paccard has certificates which prove this"—and he "was not unrewarded, for the Doctor gave him money."

M. Bourrit took up his pen in defence of the Chamonix guide, and sent a letter to the *Journal de Lausanne*, which appeared in its numbers for March 10 and 17, 1787. He contradicted point-blank some of the above statements, and challenged the production of the certificates. "If M. Paccard rewarded Balmat," said Bourrit, "it must have been *after* the publication of my letter; for I know that he offered him a crown, and that Balmat refused it." This caused the publication in the *Journal de Lausanne* for May 12, 1787, of two declarations (purporting to be signed by Balmat), which were prefaced by the following editorial remarks. "Our impartiality led us to insert, in our 13th, 15th, and 16th numbers, the complaints of Dr. Paccard [1] and M. Bourrit. . . We admit to-day the following certificates, which we do not feel able to refuse to insert. But we will say now, to those interested in this dispute, that the scheme of our paper will not allow us to occupy the attention of our readers any longer on such matters, which, perhaps, are not generally interesting." Then follow the declarations.

"I the undersigned Jacques, son of J. T. Balmat, of Pelerins, Commune of Chamonix, declare to all those it may concern, that I offered my services to Doctor M. Paccard, having learned that he wished to make a new attempt on Mont Blanc, in continuation of those which he had already made, and knowing that his own guide was away.

"As he proposed to go by the side of the Montagne de la Côte, which we thought was an impracticable route, I had doubts as to the success of the enterprise; but he told me that he had examined this direction, for the space of three years, with his telescope.

"I declare that except for the steady manner in which he proceeded we should never have succeeded; that he continually encouraged me; that he shared my labour, and sometimes himself carried a portion of the things he had given me to carry; that when I wanted to come down, as I had promised, to be of assistance to my wife and a child who was ill (this latter died on the 8th of August), he regarded my representations as excuses.

"He would not follow the route which we had taken on our last attempt, but kept straight on to the middle of the plain which is above the Glacier des Bossons. He himself traced for me his new route, by going before me, up a steep slope, which is at the foot of the great Mont Blanc. As he had always said that we should sleep out on the mountain, he made me look for a camping-place, as soon as we got to the top of this slope, whilst he ascended to examine the rocks. Not finding any, he determined to ascend the same evening to the summit, the object we were in pursuit of. He called to me, and I followed. At the same moment, I saw something dark pass above me —it was his hat, which the wind carried away with such velocity that we saw it no more.

"The Doctor continued to ascend nimbly. We came to a little rock, behind which I sheltered myself from the wind, whilst he examined it, and made collections. We were near the top of the mountain. I bore away to the left to avoid a snow slope, which Mons. Paccard courageously scaled to

[1] Hence it appears that the anonymous article was written by Dr. Paccard.

get straight to the summit of Mont Blanc. The detour I made delayed me somewhat, and I was obliged to run, to be nearly as soon as he was on the aforesaid spot.

"He made experiments there, and observations, which he wrote down. He left a mark there, and we then came down at once, quickly, following our track, and looking for it in turn. We arrived on the top of the Montagne de la Côte, where Mons. Paccard slept, on the side exposed to the glacier.

"He fed me, he paid me, and handed over money which had been given to him to transmit. In witness of which I sign this at the Bourg of Chamonix, this 18th of October, 1786, in presence of the undersigned witnesses.

"JACQUES BALMAT.

"Counter-signed by Joseph Pot and Joseph Marie Crussa, the requisite witnesses, called expressly."

SECOND TESTIMONY OF THE AFORESAID J. BALMAT.

"I, the undersigned, certify having received of Dr. Paccard a new crown on the part of the Baron de Gersdorf, on August 10, 1786, at the same time as my wage. JACQUES BALMAT.

"Chamonix, 25th of March, 1787."

It must be taken for granted that Balmat actually signed these documents, but the question arises, did he know what he was signing? Their obvious aim is the glorification of Paccard. From first to last it is Paccard who said this or did that. The merit of having pointed out and led the way, and the honour of first reaching the summit, are declared to be his. It is Paccard who helps and encourages Balmat, not Balmat who assists the doctor. If one believes Balmat, the village doctor cut a sorry figure on Mont Blanc. If one credits Paccard, the part taken by Balmat was quite subordinate. Though these curious documents may have answered their purpose at the time of publication, posterity has not estimated Paccard so highly as he might have wished. A monument has been raised in Chamonix to Balmat, and another to De Saussure. Whilst their names are remembered with gratitude, that of the village doctor is wellnigh forgotten; and, if one were to make inquiries about him, it is more than likely that the answer would be, "Who is this Doctor Paccard?" [1]

[1] Dr. Paccard continued to live at Chamonix for many years, and is referred to in several of the accounts of early ascents of Mont Blanc. At the conclusion of the famous interview between Alexandre Dumas and Balmat in 1832 the former enquired:

"'Et le docteur Paccard, est-il resté aveugle?'

'Ah! oui, aveugle! il est mort il y a onze mois, à l'âge de soixante-dix-neuf ans, et il lisait encore sans ses lunettes. Seulement il avait les yeux diablement rouges.'

'Des suites de son ascension?'

'Oh! que non!'

'Et de quoi alors?'

'Le bonhomme levait un peu le coude.'"

CHAPTER IV.

ASCENT OF MONT BLANC BY HORACE BENEDICT DE SAUSSURE.[1]

DE SAUSSURE STARTS, LED BY JACQUES BALMAT—THEY CAMP ON THE TOP OF THE MONTAGNE DE LA CÔTE—ARE AFFECTED BY 'RAREFACTION OF THE AIR'—STOP A SECOND NIGHT AT THE EDGE OF THE GRAND PLATEAU—REACH THE SUMMIT ON AUG. 3, 1787—PASS A THIRD NIGHT OUT—RENCONTRE WITH BOURRIT.

THE Public have learnt from various periodical publications, that in the month of August, last year, two Chamoniards, M. Paccard, Doctor of medicine, and Jaques[2] Balmat, guide, got to the summit of Mont Blanc, which until then had been considered inaccessible.

I heard of it the next day, and set out for the spot to endeavour to follow their track, but rain and snow obliged me to give it up for that season. I left with Jaques Balmat a commission to examine the mountain as early as the beginning of June, and to advise me directly it became accessible by the lessening of the winter snow. In the meantime I went to Provence, to make at the level of the sea some experiments which might be compared with those which I proposed to attempt on Mont Blanc.

Jaques Balmat made two unsuccessful attempts in the month of June; however, he wrote to me that he had no doubt that we should be able to get up at the beginning of July. I then set out for Chamouni. I met at Sallenche the courageous Balmat who was coming to Geneva to tell me about his latest success,—he had ascended to the summit on July 5 with two other guides, Jean-Michel Cachat and Alexis Tournier. It was raining when I got to Chamouni, and bad weather continued for nearly four weeks. But I resolved to wait to the end of the season rather than miss a favourable opportunity.

The moment so much longed for came at last, and I set out on

[1] This account is given by De Saussure in Chapter II. of the fourth volume of his *Voyages dans les Alpes*, and is headed "Relation abrégée d'un voyage a la cime du Mont Blanc en Août 1787." In a note he says, "This account is that which I published in 1787, immediately upon my return. As the public appeared satisfied with it, I have preserved it without alteration."

[2] Throughout this account, De Saussure's spelling of proper names is retained. My own notes and comments can be distinguished from De Saussure's by being bracketed.

the first of August, accompanied by a servant and 18 guides[1] who carried my physical instruments and the apparatus that I wanted. My eldest son ardently desired to come with me, but I was afraid that he was not sufficiently robust or accustomed to excursions of this nature. I obliged him to give it up. He remained at *le Prieuré*,

MONUMENT TO HORACE BENEDICT DE SAUSSURE.

where he made, with much care, corresponding observations with those that I made on the summit.

Although it is scarcely two and a quarter leagues in a straight line from the *Prieuré de Chamouni* to the summit of Mont Blanc, this

[1] Here are their names.

Jaques Balmat, dit *le Mont-Blanc*.	*Jean-Michel* }
Pierre Balmat.	*Michel* } Dévouassou, freres.
Marie Coutet.	*François* }
Jaques Balmat, domest. de Mde. Couteran.	*Pierre* }
Jean-Michel Cachat, dit *le Géant*.	*François* Coutet.
Jean-Baptiste Lombard, dit *Jorasse*.	. . . . . Ravanet.*
Alexis Tournier.	*Pierre-François* Favret.
Alexis Balmat.	*Jean-Pierre* Cachat.
Jean-Louis Dévouassou.	*Jean-Michel* Tournier.

* [Evidently a misprint for Ravanel.]

excursion has always required about 18 hours' walking, because there are *mauvais pas*, *détours*, and about 1920 toises of ascent.

I carried a tent in order to be perfectly free in the selection of places to pass the night; and on the first evening I camped under this tent at the top of the *montagne de la Côte*, which is situated to the south of *le Prieuré*, and at 779 toises above that village. This day is free from trouble and danger; one goes over turf or rock, and gets to the top easily in five or six hours. But thence to the summit, one only walks over snow or ice.

The second day is not altogether easy. At first one must traverse the glacier de la Côte[1] to reach the foot of a little chain of rocks which are enclosed by the snows of Mont Blanc. This glacier is difficult and dangerous. It is interspersed with large, deep, and irregular crevasses, and often one can only cross them by snow-bridges, which are sometimes very thin, and hanging over abysses. One of my guides just missed losing his life there. He went overnight with two others to reconnoitre. Fortunately they took the precaution to tie themselves together with rope; the snow gave way under him in the middle of a large and deep crevasse, and he remained suspended between his two comrades. We passed close to the hole which was made under him, and I shuddered at seeing the danger he had encountered. The passage of this glacier is so difficult and tortuous, that it took three hours to go from the top of la Côte to the first rocks of the isolated chain,[2] although it is scarcely more than a quarter of a league as the crow flies.

After having reached these rocks, one recedes at first from them to ascend in a winding manner in a valley filled with snow, which runs from North to South to the foot of the highest point.[3] This snow is intersected at intervals by enormous and superb crevasses. Their clean sections show the snow arranged in horizontal beds, and each of these beds corresponds with a year.[4] Whatever may be the size of these crevasses, one never sees to the bottom.

My guides wanted to pass the night upon some of these rocks; but as the highest of them were still 600 to 700 toises below the summit I wished to get higher. To do so one must camp in the middle of the snow, and I had much trouble in getting my travelling companions to assent to this. They imagined that absolutely insupportable cold reigned at night in these high regions, and were seriously afraid that they would perish there. I told them at last I was determined to go

[1] [There is no Glacier de la Côte. The Montagne de la Côte, it will be seen by reference to the Map, is the ridge or buttress dividing the lower portions of the Glacs. des Bossons and de Taconnaz. The 'little chain of rocks' are those now called the Grands Mulets, etc., and are doubtless a continuation of the ridge which, lower down, is called the Montagne de la Côte.]

[2] [In 1894, when making an ascent of Mont Blanc by this route, I occupied the same length of time, though led by such good icemen as Daniel Maquignaz and M. Zurbriggen. The part of the glacier traversed is now called 'the junction.']

[3] [This is very accurately stated. At present, upon leaving the Grands Mulets, a course is steered across the Glacier de Taconnaz towards the Aiguille de Goûter. See the Map, and the engraving of Mont Blanc from the Brevent, on which the route at present followed is laid down.]

[4] [This is very doubtful.]

there with those upon whom I could rely, that we would dig deep down into the snow and cover the excavation with the tent-cloth, that we should be enclosed all together, and so should not suffer from cold, however severe it might be. This arrangement reassured them, and we went forwards.

At four in the afternoon we reached the second of the three great snowy plateaux which we had to cross, and there we encamped at 1455 toises above le Prieuré and 1995 above the sea, 90 toises higher than the top of the Peak of Teneriffe. We did not go so far as the last plateau, because one is exposed there to avalanches.[1] The first plateau that we crossed is not exempt from them. We traversed two avalanches that had fallen since Balmat's last ascent, the debris of which covered the whole breadth of the valley.

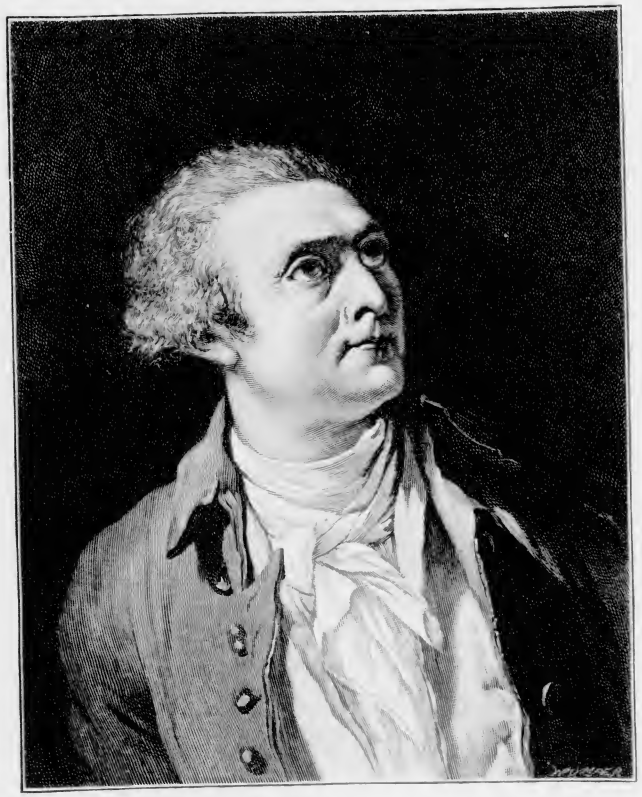
My guides at once set to work to excavate the place where we were to pass the night, but they soon felt the effect of rarefaction of the air. These hardy men, to whom seven or eight hours' walking counts as nothing, did not throw out more than five or six shovelfuls of snow before they found it impossible to continue, and were obliged to relieve each other from one minute to another. One of them, who went back to get in a cask some water which we had seen in a crevasse, was taken ill whilst going down, came back without any water, and passed the evening in great suffering. I myself, who am so accustomed to the mountain air that I feel better in it than down below, I was exhausted with fatigue when observing my meteorological instruments. This indisposition produced a burning thirst, and we could only get water by melting snow; for the water which we had seen when coming up was found frozen when we went back for it, and the little furnace (*réchaud à charbon*) which I had brought supplied twenty thirsty people very slowly.

From the middle of this plateau, enclosed between the summit of Mont Blanc on the south, steep slopes on the east, and the Dôme du Goûter on the west, one sees scarcely anything but snow, pure and of a dazzling whiteness, contrasting remarkably on the high elevation

[1] [The 'third' and 'last' plateau referred to by De Saussure is now called the Grand Plateau, and it is, as he says, exposed to avalanches, that fall on to it from the glacier (underneath the summit) which extends from the Rochers Rouges to the Bosses du Dromadaire. See engraving of Mont Blanc from the Brevent. De Saussure could not have been aware from personal knowledge that avalanches fell there, but it does not appear from whom he learnt this, or at whose advice he pitched his camp where he did.

The engraving on page 25 is a reproduction of Pl. II. vol. iv. of De Saussure's *Voyages*, which gives his track. The two asterisks indicate the places where he encamped when ascending. (*Places où l'on a campé en montant.*) The lower one is placed a little below the top of the Montagne de la Côte. At that position there are at the present time some very large boulders, and it was against these De Saussure's camp was made. This is clear from a later narrative in which he enters more into detail. A little lower down the track is made to pass along the side of the Glacier des Bossons. I doubt very much if he did so,—firstly, from the nature of the glacier at that point, and, secondly, because there is no mention of anything of the kind in the narrative. On the contrary, he states regarding the first day, "This day is free from trouble; one goes over *turf or rock*."

The higher camp he expressly states was not made upon the third (*i.e.* the Grand) plateau. "We did not go so far as the last plateau;" but upon the engraving the asterisk is placed *higher* than the Grand Plateau. These may be mistakes of the draughtsman of the plate; anyhow, the plate does not agree with the narrative.]



HORACE BENEDICT DE SAUSSURE,

FROM THE PICTURE IN THE UNIVERSITY LIBRARY, GENEVA.

with the almost black sky of these lofty regions. No living being is seen, no trace of vegetation; it is the abode of frost and stillness. When I pictured to myself Doctor Paccard and Jaques Balmat arriving in this wilderness towards the end of the day, without shelter or assistance, without even the certainty that men could live in the places where they aspired to go, yet always pursuing their course with intrepidity, I admired their strength, spirit, and courage.

My guides, always preoccupied by fear of cold, closed the tent so tightly that I suffered much from heat and the stuffiness of the atmosphere. In the course of the night I was obliged to go out to breathe. The moon shone brilliantly in an ebony sky. . . We had at last begun to sleep when we were aroused by the noise of a great avalanche, which covered a part of the slope we had to ascend the next day. At daybreak the thermometer stood at three degrees below freezing point.

We started late, because it was necessary to melt snow for breakfast and for use on the way. It was drank as soon as melted, and these people who took religious care of the wine that I brought, robbed me continually of the water which was kept in reserve.

We began by ascending to the third and last plateau, then we bore away to the left to get to the highest rock on the East of the summit. The slope is extremely steep, 39 degrees in some places; everywhere it abutted on precipices, and the surface of the snow was so hard that those who went first could not make sure of their footing without using an axe. We took two hours to scale this slope, which is about 250 toises high. Arrived at the last rock, we turned again to the right, to the West,[1] to climb the last slope, the perpendicular height of which is about 150 toises. This slope has an inclination of only about 28 or 29 degrees, and is free from danger; but the air is so thin there that the strength is rapidly exhausted. I could not take more than 15 or 16 steps at a time without stopping to breathe, I felt even from time to time a tendency to swoon which obliged me to sit down; but as respiration was righted I felt my strength restored; it seemed when recommencing to walk that I could go in a flash to the summit of the mountain. All my guides were in the same condition. We took two hours from the last rock to the top, and it was eleven o'clock when we got there.[2]

My first looks were directed to Chamouni, where I knew that my wife and her two sisters, with eyes fixed at the telescope, were watching my movements with uneasiness. . . I could then enjoy the grand spectacle which I had beneath my eyes. Light vapours hanging about the lower regions robbed me indeed of the lowest and the farthest details, such as the plains of France and Lombardy: but I did not much regret this loss; that which I came to see, and what I saw most clearly, was the general effect of the high summits whose arrangement I had so long wanted to understand. I couldn't believe

[1] [This is not correct,—the course is more south than west.]

[2] [De Saussure's 'last rock' is evidently the top of the Rochers Rouges, the position at present occupied by Dr. Janssen's hut. The last rocks, however, on this side (the Petits Rochers Rouges and the Petits Mulets) are higher up.]

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my eyes, it seemed like a dream, to see beneath my feet these majestic peaks, these formidable Aiguilles, le Midi, l'Argentière, le Géant, to get to whose very bases had been for me so difficult and so dangerous. I seized their bearings, their connexion, their structure, and a single glance cleared away doubts which years of work had not been able to enlighten.

During this time the guides pitched my tent, and set up the little table for my experiments with boiling-water. But when I began to arrange and to observe my instruments, I found myself constantly compelled to leave off work to take care of my respiration. If one considers that the barometer stood at only 16 inches and 1 line[1] [French], and that the air, thus, was scarcely more than half its usual density, it will be understood that it was necessary to make up for the want of density by frequency of inspiration. This quickening accelerated the movement of the blood, so much the more as the arteries were not subjected externally to the usual pressure. Thus we were all feverish.

When I kept perfectly quiet I experienced but little discomfort—a slight tendency to sickness. But when I took trouble, or when I kept my attention fixed for several seconds continuously, and especially when I compressed the chest in stooping, I was obliged to rest and pant for two or three minutes. My guides experienced similar sensations. They had no appetite, and indeed our provisions, which were all frozen *en route*, were not calculated to excite one. They did not even care for wine and *eau-de-vie*. In fact they had found out that strong drink made them worse, doubtless, by further acceleration of the circulation. Water alone did them good and gave pleasure, and it needed time and trouble to light the fire, without which we couldn't have any.

I remained, however, upon the summit until half-past three, and though I did not lose a single moment I could not make in those four hours and a half all the experiments which I have frequently performed in less than three hours at the level of the sea. I made carefully, nevertheless, those which were the most important.

I descended much more easily than might have been expected. As one's movements in coming down do not compress the diaphragm, respiration is not upset, and one is not obliged to stop for breath. The descent from the rock [Rochers Rouges] to the first plateau [the Grand Plateau] was however very difficult on account of its steepness, and the sun lighted up the precipices at our feet so brilliantly that good heads were necessary not to be frightened. I camped again on snow, 200 toises lower than the previous night. It was there I became convinced it was the rarity of the air which had incommoded us on the summit, for if it had been fatigue we should have been much worse after this long and tiring descent; but on the

[1] [Equal to about 435 millimètres. From another observation he obtained a slightly lower reading. His *mean* appears to have been about 434 mm. This was on August 3, 1787. Fifty-seven years later (Aug. 1844) Charles Martins found the *mean* of four observations of mercurial barometer, reduced to 32° F., was 424·27 mm., and fifty years after Martins (July 26-27, 1894) I found the mean of seven observations of mercurial barometer, reduced to 32° F., was 423 mm.]

contrary we ate with a good appetite, and I made my observations without any discomfort. I think that the height where ill-effects begin to be felt is perfectly decided for each individual person. I keep very well up to 1900 toises [12,150 feet] above the sea, but I commence to feel inconvenience when I get higher.

On the morrow we found the glacier de la Côte had undergone changes from the heat of the two past days, and was still more difficult to cross than it had been on the ascent. We were obliged to descend a slope of snow at an inclination of 50 degrees, to avoid a crevasse which had opened during our journey. At length, at half-past nine, we landed on the montagne de la Côte, well pleased to find ourselves on soil which we were not afraid would yield under our feet.

I met there M. Bourrit, who would have engaged some of my guides to remount immediately with him; but they found themselves very tired, and wished for rest at Chamonni. We descended all together merrily to the Prieuré, and arrived in time for dinner. I had much pleasure in bringing them back safe and sound, with their eyes and faces in the best condition. The black crape with which we had covered our faces perfectly protected us, instead of which our predecessors had come back almost blind, and with their faces burnt, cracked, and bleeding from the "*réverbération des neiges.*"

ICE-AXE AND BÂTON.

CHAPTER V.

CONTINUATION OF HISTORY OF CHAMONIX AND MONT BLANC.

DE SAUSSURE'S FOLLOWERS—HIS RESIDENCE ON THE COL DU GÉANT—HIS *BARRIÈRE AMBULANTE*—DEVIATIONS FROM THE ORIGINAL ROUTE UP MONT BLANC—THE 'CORRIDOR' ROUTE—ALEXANDRE DUMAS AND JACQUES BALMAT—AUGUSTE BALMAT—ALBERT SMITH AND HIS SHOW—FIRST ASCENT OF MONT BLANC FROM ST. GERVAIS—THE ROUTE BY THE 'BOSSES'—NAPOLEON III VISITS CHAMONIX—MONT BLANC INVADED—TABLE OF ASCENTS.

HORACE BENEDICT DE SAUSSURE was not a mountaineer, and did not pretend to be one; but his ascent of Mont Blanc gave an impetus to mountain exploration, and, unwittingly, he started the fashion for mountaineering. No sooner did he return to Chamonix than a tourist who was there went off and followed De Saussure's track. He was almost the first of the mountaineering race. The Genevese philosopher ascended the mountain to make physical, meteorological, and geological observations: Colonel Beaufoy went up principally to amuse himself. De Saussure does not, however, seem to have done much in the way of attracting others to Mont Blanc, for very few ascents were made in the twenty-five years following 1787. There was one in 1788, but not another until 1802, and the next one was made seven years later. The Chamoniards, on their part, possibly, were not eager that people should attempt an enterprize which they themselves found was laborious; or, it may be, that preoccupied by matters of greater moment, which affected every hearth in the valley,[1] they paid little attention to affairs that did not promise immediate results, and that this explains why no records relating to the earliest ascents can be found in their archives.[2]

In the twenty-five years after Mont Blanc was conquered there were only half-a-dozen other ascents, and the persons who went up had to be nursed and cared for like so many children. Even the professional guide went about in those days in a fashion which would now be thought absurd. The ice-axe was almost unknown, and when difficulties were met with they had to be avoided, or circumvented. During the lifetime of De Saussure two engravings were

[1] See pages 4, 5.

[2] By the courtesy of M. le Maire, I have been permitted to search the archives, and have not found anything relating either to the first ascent by Balmat, or the subsequent one by De Saussure.

executed under his direction shewing the manner in which he and his troop of guides went to the Col du Géant and back again. In the one which shews them *descending*, they are not using a rope, and are wandering about like a flock of sheep. The whole of the party are employing alpenstocks—not ice-axes—and for the most part are holding them improperly. They are endeavouring to prop themselves up with them in front, instead of leaning upon them behind, as they should do. M. de Saussure (who is seen on the left) is about to harpoon one of his own feet; and, if he continues to hold the implement in that manner, in the course of the next few yards must infallibly tumble head over heels. De Saussure went about on his mountain expeditions in a long-tailed silk coat, with enormous buttons. The coat which he is said to have worn on his ascent of Mont Blanc is preserved at the family house at Genthod, near Geneva; and, whether it is the identical coat or not, it agrees fairly well with the garment in which he is represented in the engraving.

The sojourn of De Saussure on the top of the Col du Géant,—a *pendant* to his ascent of Mont Blanc, which originated in his desire to complete observations that were left unfinished on the summit of the mountain—was a troublesome, and, for the period, a remarkably adventurous undertaking, which was successfully carried out. Besides the initial difficulty of transporting the food and the means of shelter for a number of persons during a long stay at a considerable elevation, there was the more wearisome business of coaxing his people to remain, and of preventing them from bolting, through *ennui*, from want of occupation.

He started from Chamonix on July 2, 1788, and camped under tent close to the little lake at the Tacul. They continued upwards at 5.30 a.m. on July 3, and at 12.30 arrived at the *cabane* which he had had constructed at the summit of the pass. "*I call this place*," he said, "*the Col du Géant*"—which is something like evidence that the pass had not been *named* before. In going to the Col from the Tacul, they did not take the same way as "their predecessors in the previous year," and went by the *eastern* side of the glacier which is now called the Glacier du Géant or du Tacul, skirting the base of the Aiguille Noire, along extremely steep snow-slopes fringed with crevasses. "Our guides assured us that this way is much more dangerous than that which they had followed in the previous year; but I don't place much dependance upon these assertions, because present danger always appears greater than that which is over, and because they endeavour to flatter travellers by telling them that they have escaped from great perils. Still," he says, "the way by la Noire is actually dangerous; and, as it had frozen in the night, it would have been impossible to have traversed the steep and hard snow, if our people had not gone overnight to make steps, while the slopes were softened by the rays of the sun,"—and this seems to shew that they were not great adepts in the use of the ice-axe. That is all De Saussure says about the passage of the ice-fall of the Glacier du Géant, which always requires skill and caution, and often in these later years taxes the ingenuity of those who pass that way.

HORACE BENEDICT DE SAUSSURE DESCENDING FROM THE COL DU GÉANT.

Six, eight, or even ten hours are sometimes occupied among the *séracs* of the Géant alone; so that, in taking only seven hours to get from the Tacul to the Col, De Saussure must be regarded fortunate.

Both upon his visit to the Col du Géant, and upon his ascent of Mont Blanc he escaped accident, though his manner of going about was well calculated to lead to trouble. Before 1787 (although he had ascended the Buet), it is probable that he knew nothing from personal experience about concealed crevasses, and the precautions which it is desirable to take in regard to them. There is no indication that he was ever attached to his guides by rope. In speaking of his ascent of the slopes above the Grand Plateau, he said that he got assistance from his guides by a method which appeared to him to be at once the safest for those who are assisted and the least inconvenient for those who assist. "That is, to have a light, but strong bâton 8 or 10 feet long; and two guides, one before and the other behind, holding the bâton by its ends, on the side of the precipice; while you walk between them, with this '*barrière ambulante*' to support you in case of need. This neither bores nor tires the guides in the least, and may afford support to them themselves if one should happen to slip. . . It is in this attitude," he says, "I have been represented by M. le Chevalier de Mechel in the large coloured plate that he has engraved of our caravan."[1] This was his method of insuring himself against slips, or falling into concealed crevasses. It is apparent, however, that the Chamonix guides of his time were acquainted with the use of the rope, and that *they* sometimes attached themselves together, and so averted disaster; though more commonly they merely carried rope about with them, and only brought it into use to repair the results of want of knowledge or stupidity. This is seen from the incident that has already been related, in which Marie Conttet owed his escape to being tied to two of his comrades; but the incident did not make a very deep impression, for on the journey to the Col du Géant no one, apparently, was roped. "All at once," said De Saussure, "we heard cries of '*des cordes, des cordes.*' They were wanted to get Alexis Balmat—one of our porters who was about a hundred paces in advance—out of the bowels of the glacier. He disappeared all at once in the midst of his comrades, swallowed up by a large crevasse, sixty feet deep. Happily, half-way down, he was supported by a mass of snow stuck in the cleft."

[1] This is the engraving entitled 'Horace Benedict de Saussure and his son on the way to the Col du Géant.' De Saussure is shewn between two guides, who are holding the bâton 'on the side of the (five feet high) precipice.' The ladder-bearer leads the way, and is followed by the only man with an ice-axe.

The original Meteorological Observations made by De Saussure on the Col du Géant were published *in extenso* for the first time by his grandson (Henri de Saussure) in the *Mémoires de la Société de Physique et d'Histoire Naturelle de Genève*, in 1891, on the occasion of the centenary of the foundation of the Society. The Memoir has as frontispiece a photographic reproduction of a drawing which is stated to be 'un dessin authentique retrouvé dans les papiers d'H.-B. de Saussure relatifs à cette expédition.' This drawing appears to be a first sketch for the engraved plate, and has numerous differences from it, amongst which it may be mentioned that the ladder-bearer is in the rear, the man with the axe is fourth in line, and M. de Saussure has *not* got the bâton on the side of the precipice.

The engraving in which he is shewn descending is *reversed*, through the drawing having been made the wrong way upon the plate. De Saussure descended the Italian

HORACE BENEDICT DE SAUSSURE DESCENDING FROM THE COL DU GÉANT.

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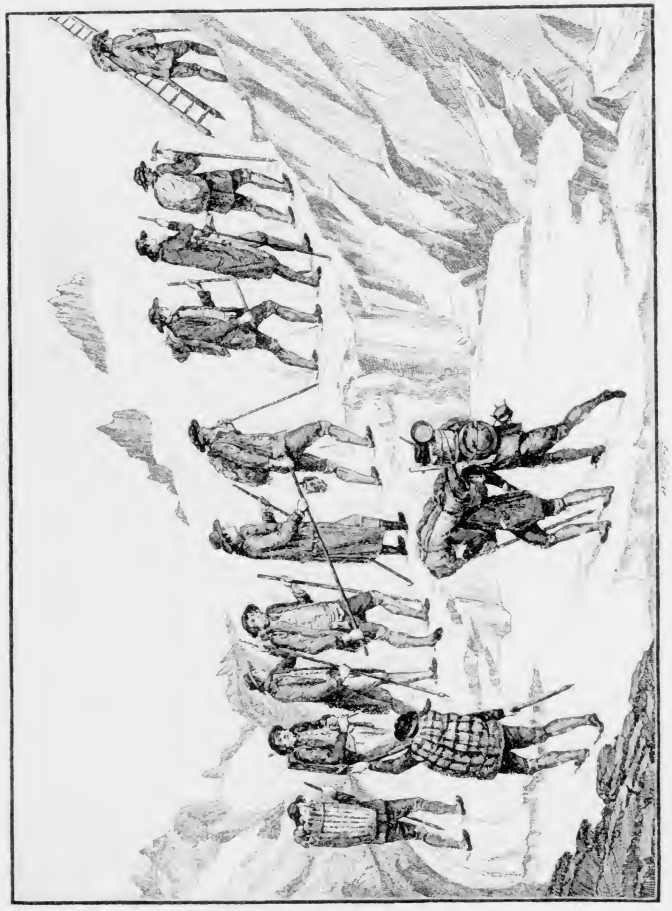
Both upon his visit to the Col du Géant, and upon his ascent of Mont Blanc he escaped accident, though his manner of going about was well calculated to lead to trouble. Before 1787 (although he had ascended the Buet), it is probable that he knew nothing from personal experience about concealed crevasses, and the precautions which it is desirable to take in regard to them. There is no indication that he was ever attached to his guides by rope. In speaking of his ascent of the slopes above the Grand Plateau, he said that he got assistance from his guides by a method which appeared to him to be at once the safest for those who are assisted and the least inconvenient for those who assist. "That is, to have a light, but strong bâton 8 or 10 feet long; and two guides, one before and the other behind, holding the bâton by its ends, on the side of the precipice; while you walk between them, with this '*barriere ambulante*' to support you in case of need. This neither bores nor tires the guides in the least, and may afford support to them themselves if one should happen to slip. . . It is in this attitude," he says, "I have been represented by M. le Chevalier de Mechel in the large coloured plate that he has engraved of our caravan."[1] This was his method of insuring himself against slips, or falling into concealed crevasses. It is apparent, however, that the Chamonix guides of his time were acquainted with the use of the rope, and that *they* sometimes attached themselves together, and so averted disaster; though more commonly they merely carried rope about with them, and only brought it into use to repair the results of want of knowledge or stupidity. This is seen from the incident that has already been related, in which Marie Couttet owed his escape to being tied to two of his comrades; but the incident did not make a very deep impression, for on the journey to the Col du Géant no one, apparently, was roped. "All at once," said De Saussure, "we heard cries of '*des cordes, des cordes.*' They were wanted to get Alexis Balmat—one of our porters who was about a hundred paces in advance—out of the bowels of the glacier. He disappeared all at once in the midst of his comrades, swallowed up by a large crevasse, sixty feet deep. Happily, half-way down, he was supported by a mass of snow stuck in the cleft."

[1] This is the engraving entitled 'Horace Benedict de Saussure and his son on the way to the Col du Geant.' De Saussure is shewn between two guides, who are holding the baton 'on the side of the (five feet high) precipice.' The ladder-bearer leads the way, and is followed by the only man with an ice-axe.

The original Meteorological Observations made by De Saussure on the Col du Geant were published *in extenso* for the first time by his grandson (Henri de Saussure) in the *Memoires de la Société de Physique et d'Histoire Naturelle de Genève*, in 1891, on the occasion of the centenary of the foundation of the Society. The Memoir has as frontispiece a photographic reproduction of a drawing which is stated to be 'un dessin authentique retrouvé dans les papiers d'H.-B. de Saussure relatifs à cette expédition.' This drawing appears to be a first sketch for the engraved plate, and has numerous differences from it, amongst which it may be mentioned that the ladder-bearer is in the rear, the man with the axe is fourth in line, and M. de Saussure has *not* got the bâton on the side of the precipice.

The engraving in which he is shewn descending is *reversed*, through the drawing having been made the wrong way upon the plate. De Saussure descended the Italian



HORACE BENEDICT DE SAUSSURE AND HIS SON ON THE WAY TO THE COL DU GÉANT.

Nothing need be said about the majority of the ascents of Mont Blanc which were made in the early part of the 19th century. Guides and tourists, alike, were content to follow in the established track; and down to 1819 the only variation that had been made upon the ordinary route was at the commencement of the ascent. Instead of going *rià* the Montagne de la Côte, the line was taken which it has been customary to follow ever since, by way of the Pierre Pointue and Pierre de l'Echelle; a line that to some extent avoids, though it does not entirely escape, the contorted and riven ice at the 'junction,' which has always been found troublesome.[1]

The next deviation from Balmat's original way was made in 1827, when Sir C. Fellows and Mr. Hawes went from the Grand Plateau to the summit by what is now termed the Corridor route; and, from that time until the ridge of the Bosses was shewn to be practicable, the Corridor route became that which was usually taken. Mr. John Auldjo, who went up Mont Blanc on Aug. 9, 1827, says he crossed the Grand Plateau towards the left, "leaving the old route, which led right across the plain"; and later on, when above the Rochers Rouges, he mentions that he "came again into the old line of ascent, which we had quitted on the Grand Plateau," and says that the new line was first taken "by Messrs. Hawes and Fellows, on the 25th of July last, we having followed the route which these gentlemen had discovered."[2]

Other things happened in the early part of the century which spread the fame of Chamonix and Mont Blanc. Chamonix has always benefited by *publicity*, and Alexandre Dumas gave it greater publicity than anyone had done before his time by the chapters in his *Impressions de Voyage* in which he described the incidents of his visit, and related his interview with Jacques Balmat.[3] Ten years later public attention was again drawn prominently to Chamonix through the observations which were made by Prof. J. D. Forbes when studying the movements of glaciers, and especially by the map of the Mer de Glace that he constructed in connection with his work, which gave to the public, for the first time, an intelligible representation of the renowned glacier and its tributaries.[4] Professor Forbes' observations and experiments

side of the Col. The valley down below on the left should be upon the right of the plate. It is intended to represent the upper end of the Italian Val Ferret.

[1] So recently as 1855, Messrs. Hudson, Kennedy, Ainslie and Smyth, who were amongst the best amateurs of their time, were *unable* to descend from the Grands Mulets to the top of the Montagne de la Côte. "We arrived at a point situated on the edge of the Glaciers des Bossons and Taconnay, and only a few hundred yards from the summit of the Montagne de la Côte, which was just below us. But in each attempt to gain it, were brought up by enormous and impassable crevasses." *Where there's a Will there's a Way*, by the Rev. Charles Hudson and Edward Shirley Kennedy, London, 1856.

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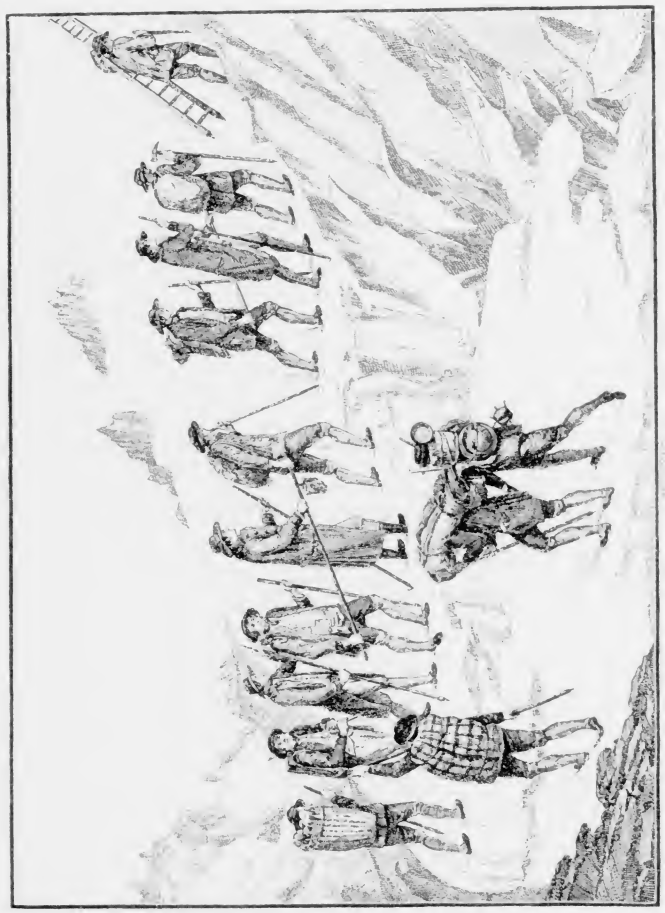
[4] This map remained for twenty years the only accurate one of any portion of the Chain, and it is not yet superseded. His base-line, 2992 feet long, from which his scale was obtained, was measured on the road from Chamonix to Argentière, between the hamlets of les Praz and les Tines.



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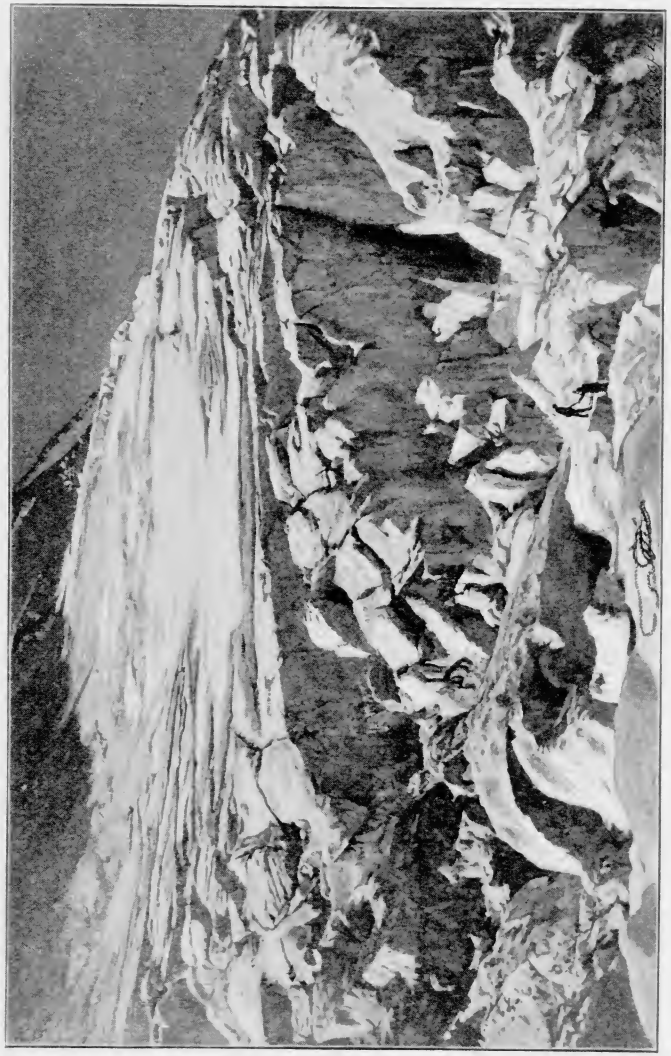

THE "JUNCTION" OF THE GLACIER DES BOSSONS AND THE GLACIER DE TACONNAZ.

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But before that stirring episode occurred, another person did more to magnify Chamouix and Mont Blanc than any other who had preceded him. Mr. Albert Smith, a struggling *littérateur*, conceived the idea that an ascent of Mont Blanc, illustrated by dioramic views, might be made an exceedingly popular "entertainment," and he did not deceive himself. So popular did he make it that it would, doubtless, still be running if Albert Smith were still alive. Until *his* time the ascent of Mont Blanc was usually looked upon as a very serious business. Men commonly made wills before starting for it, and wrote heavy accounts of the dangers of the enterprise when they came down. Albert Smith invented a new treatment. In his hands the whole thing was a joke—a piece of sport. He made merry over his troubles, jested at the funny persons he met, and laughed at everything. From the account which he himself has given, it appears that he was smitten with a fancy for Mont Blanc at a very early age. When he was ten years old he had a little book given to him at the Soho Bazaar, called the *Peasants of Chamonix*, which told the story of Dr. Hamel's attempt to reach the summit of Mont Blanc in 1820. On this occasion three lives were lost through disturbing new-fallen snow. This little twaddly book, which was published for the delectation of children, made a deep impression upon Albert Smith. "I do not think," he said, "that the *Pilgrim's Progress* stood in higher favour with me," and he eventually produced a small moving panorama of the horrors pertaining to Mont Blanc. "This I so painted up and exaggerated in my enthusiasm that my little sister—who was my only audience, but a most admirable one—would become quite pale with fright."

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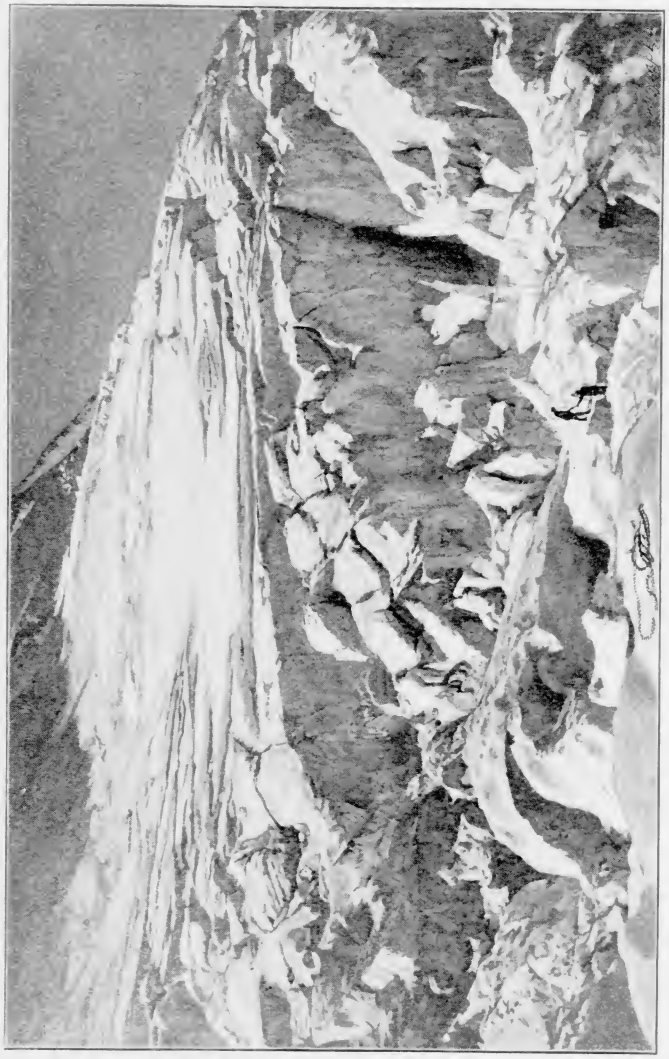

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In 1851 he carried out his long-cherished desire, and attained the summit of Mont Blanc; and nine months afterwards produced at the Egyptian Hall, Piccadilly, an entertainment descriptive of the ascent, which "took the world by storm, and became the most popular exhibition of the kind ever known." The effect was immediate. Whereas in the sixty-four years from 1786 to the end of 1850 there had been only fifty-seven ascents of Mont Blanc, in the six years 1852-57 there were sixty-four ascents. Before 1851 (Albert Smith's year) several seasons often passed without anyone reaching the summit; but since 1851 *no* year has gone by without an ascent being made, or several, or many. This development was, however, at least in part, owing to Chamonix becoming more accessible through the extension of railways; but it is due to Albert Smith to say that his influence

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The first ascent of Mont Blanc *from St. Gervais* was made in 1855 by a party of Englishmen, two of whom (Hudson and Kennedy) published a book in 1856, giving a description of the excursion, under the title *Where there's a Will there's a Way, an ascent of Mont Blanc by a new route and without guides.* They started on the 13th of August, taking six porters and three chasseurs. The porters were sent back when some *cabanes* were reached on the Aiguille du Goûter which had been put up in 1853-4, at a height of about 10,000 feet; and on the 14th they continued upwards to the top of the Aiguille du Goûter and thence to the Dôme du Goûter by the same route that had been taken in 1784, by the chasseurs who were with Bourrit.[2] From the Dôme du Goûter, Hudson and Kennedy's party *descended on to the Grand Plateau*, still accompanied for some of the distance by two of the chasseurs, Cuidet and Hoste, the former of whom pointed out the way to the Corridor;[3] but the remainder of the ascent, and the descent to Chamonix *viâ* the Corridor, Grands Mulets, and Pierre Pointue were made alone. Although this was called 'a new route,' no part of it was new,—the Dôme du Goûter, as we have already seen (p. 17), having been reached from the Chamonix side by Jacques Balmat and his associates in 1786.

It is not very clearly explained in the account which was published about the excursion why this eccentric route was followed; but, from such remarks as are made upon the matter, it seems that the party started with a desire (if not with the intention) to make an ascent by way of 'the Bosses'; and that, on arriving at the foot of the lower Bosse (that is to say, to about the position at present occupied by the Vallot Observatory) they came to the conclusion that the ridge of the Bosses was too much for them. All the party, it is said, especially paid attention to the Bosse du Dromadaire, and their "unanimous strong conviction" was that there was nothing to hinder one from reaching the summit by that way. "We did not, however, try the 'Dromedary's Hump' on this occasion, for the north wind was very strong and cold, and we should have been exposed to its chilling influences for more than two hours. . . Again, as some of the party were obliged to be in England in a few days, we did not like to endanger the success of this their last attempt by

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trying a route which might have ended in disappointment." When upon the summit ridge, two of the party went to its western end and looked down upon the Bosses, "and as the eye hastily surveyed it . . . they could detect nothing to prevent the ascent of Mont Blanc being made by" that way.

The first ascent of Mont Blanc that is known to have been effected by the ridge of the Bosses was made by the Rev. Charles Hudson, with the guides Melchior Anderegg, F. Couttet and others in 1859. Since then, this route has grown steadily in estimation, and at the present time it is perhaps more generally taken than the way by the Corridor. Public opinion, in the course of a century, has declared in favour of the route which was originally proposed, and which was attempted to be followed in 1786 by Jacques Balmat and his associates.

The visit of Napoleon III in 1860, following on the annexation of Savoy, had an important effect on the future of the valley. It drew the largest concourse of people together that has ever been seen at Chamonix, either before or since; and led to the construction of the fine road from le Fayet *viâ* Chatelard and les Montées, which superseded the old and rougher road by way of Servoz, and, by rendering access easier, produced the natural result.

Although it was apparent to Chamoniards by this time (and had been apparent long before) that Mont Blanc was a gold mine for the valley,[1] they did not seem to perceive that there were other mines in the range of a similar nature, which might become equally lucrative. Apart from the experience they gained in crystal hunting and chamois hunting, they had little practice in the higher regions beyond such as it is possible to acquire by crossing the Col du Géant, or upon ascents of the Buet and Mont Blanc; and it is to this circumstance that, so recently as 1860, the majority even of the best Chamonix guides were more dexterous upon snow and ice than upon rocks. Down to 1860, but few of the minor points[2] and none of the highest peaks in the chain of Mont Blanc had been ascended,

[1] It is stated by Capt. M. Sherwill that De Saussure paid his guides, on the ascent of Mont Blanc, *six francs per day*. Sherwill seems to have got the information from one of the Couttets who went with the Professor.

In 1820, the price per guide for Mont Blanc was forty-eight francs. Mr. Jackson, in the account of his ascent made Sept. 4, 1823, mentions that the guides were paid sixty francs apiece. "Upon my return," he says, "I made them a present of an additional five franc piece, with which they were all perfectly content."

By 1851, the 'tarif' had risen to 100 francs per man, and it has remained at that figure ever since.

[2] The Aiguille du Midi was ascended in August, 1856, by Alexandre Devouassoux and Ambroise Simond (guides) and by Jean Simond, a boy of seventeen (porter), who were employed by Count Fernand de Bouillé. Twenty-four mètres below the summit, the Count and the rest of his party were left behind, while the three went up. They were away an hour, and upon returning flatly refused to conduct their employer to the summit. Said Devouassoux, amongst other things, "Monsieur le comte, your flag floats above, the ascent is made; but for all the riches of the world I won't go up again." Said Simond, "There's not one of you capable of going there without losing his life. My spirit may go there perhaps after my death, but my body *never*. The business is over,—no one shall compel me to go there again" (*Les Fastes du Mont Blanc*, par Stéphen d'Arve, Genève, 1876). It was rather hard on the Count, who had taken eight guides and porters, and a miner, on the occasion, and had made several other attempts to ascend the Aiguille.

and no passages were known across the main chain excepting the Cols du Géant, de Miage, and du Tour.[1] The exploration of the little-known parts of the range was mainly effected by the enterprize and through the curiosity of strangers.

In 1861, Mr. Stephen Winkworth effected the first passage of the Col d'Argentière; and in 1863 Messrs. Buxton, George, and Macdonald invented the Col de la Tour Noire, and Messrs. Brandram and Reilly crossed the Col du Chardonnet. The latter excursion was made in connection with the map of Mont Blanc upon which Mr. Reilly was engaged, and the production of this map gave an impetus to the investigation of the chain of Mont Blanc. Both the ends of the chain were little known, and to survey them a certain amount of exploration was necessary. Mr. Reilly invited me to join him in this, and on July 8, 1864, we crossed the Col de Triolet, on the 9th ascended Mont Dolent, on the 12th the Aiguille de Trélatête, and on the 15th the Aiguille d'Argentière.[2] The selection of these points was solely determined by topographical considerations, the aim being to attain prominent positions commanding the least-known parts of the range. In the following year I gave attention to some of the highest points of the chain, and endeavoured to find a pass across the main range, which might compete with or supersede the Col du Géant. On June 24, 1865, I ascended the Grandes Jorasses, on June 26 crossed the Col Dolent, on June 29 ascended the Aiguille Verte, and on July 3 crossed the Col de Talèfre.[3] On July 28 of the same year, my friends Messrs. Buxton, Grove, and Macdonald conquered the Aiguille de Bionnassay; and Mr. Fowler, on Sept. 20, scaled the Aiguille du Chardonnet. The lower peaks have all been ascended since then. The last to yield were the Aiguille du Dru (Sept. 12, 1878), the Aiguille du Géant (July 29, 1882), and the Aiguille Blanche de Péteret (July 31, 1885). Some of these excursions have become popular. The ascent of the Aiguille Verte, for example, was made in 1895 more than thirty times. But none of them vie in popularity with le Grand Mont Blanc—the Great White Mountain. Time augments its fame; and, annually, increasing numbers make pilgrimages to its summit, attracted by the striking grandeur of its scenery, from interest in its traditions, and because it is the loftiest mountain in the Alps.

[1] The pass of the Col du Géant is probably the *first* which was effected across the main range of Mont Blanc.

[2] See *Scrambles amongst the Alps*, chapter xi.

[3] *Scrambles amongst the Alps*, chaps. xvi-xix.

TABLE OF ASCENTS OF MONT BLANC SHEWING HOW MANY (STARTING FROM CHAMONIX) WERE MADE IN EACH YEAR, FROM 1850 TO 1895.

	No. of Ascents.		No. of Ascents.		No. of Ascents.
To the end of 1850 .	57	To the end of 1865 .	341	To the end of 1881 .	801
do. 1851 .	58	do. 1866 .	357	do. 1882 .	843
do. 1852 .	60	do. 1867 .	383	do. 1883 .	895
do. 1853 .	65	do. 1868 .	405	do. 1884 .	937
do. 1854 .	83	do. 1869 .	436	do. 1885 .	956
do. 1855 .	98	do. 1870 .	445	do. 1886 .	1012
do. 1856 .	108	do. 1871 .	456	do. 1887 .	1059
do. 1857 .	122*	do. 1872 .	495	do. 1888 .	1095
do. 1858 .	152	do. 1873 .	523	do. 1889 .	1144
do. 1859 .	171	do. 1874 .	557	do. 1890 .	1196
do. 1860 .	172	do. 1875 .	592	do. 1891 .	1257
do. 1861 .	209	do. 1876 .	636	do. 1892 .	1297
do. 1862 .	231	do. 1877 .	662	do. 1893 .	1361
do. 1863 .	265	do. 1878 .	691	do. 1894 .	1400
do. 1864 .	306	do. 1879 .	722	do. 1895 .	1483
		do. 1880*.	799		

These figures are taken from the Register kept in the Bureau des Guides, in which the ascents made from Chamonix are supposed to be numbered in rotation. In examining this Register I have noticed two errors. Between the years 1857-58 there is a jump from No. 122 to No. 141, that is to say there are no numbers 123 to 140 inclusive; while between 1880 and 1881 there is a retrograde movement,—the year 1880 terminates at No. 799, and 1881 commences with No. 760! To ascertain the number of Ascents actually upon the Register, eighteen must be deducted and forty must be added, and the corrected total, down to the end of 1895, is 1505.[1]

In the years 1787 to 1850 . . .	57	Ascents were made.
.. 1851 .. 1860 . . .	97	do.
.. 1861 .. 1870 . . .	273	do.
.. 1871 .. 1880 . . .	354	do.
.. 1881 .. 1890 . . .	437	do.
.. 1891 .. 1895 . . .	287	do.

[1] This is the number of Ascents actually upon the Register, but many other ascents have been made both from Chamonix and from St. Gervais which are *not* upon the Register.

CHAPTER VI.

A CHAPTER OF ACCIDENTS.

THE *AFFAIRE HAMEL*—ACCIDENT ON THE ITALIAN SIDE OF THE COL DU GÉANT—AMBROISE COUTTET WALKS INTO A CREVASSE—THE DEATH OF MR. YOUNG—CAPT. ARKWRIGHT KILLED BY AN AVALANCHE—MRS. MARKE AND OLIVIER GAY—ELEVEN PERSONS PERISH NEAR THE SUMMIT—DEATH OF PROF. FEDCHENKO—MR. MARSHALL AND JOHANN FISCHER KILLED IN A CREVASSE—PROF. BALFOUR AND PETRUS PERISH ON THE AIG. BLANCHE DE PEUTERET—M. GUTTINGER KILLED BY FALLING ROCKS—THE FATE OF THE ABBÉ CHIFFLET—BRUNOD'S END—LOSS OF COUNT VILLANOVA AND J.-J. MAQUIGNAZ—HERR ROTHE KILLED ON THE PETIT PLATEAU—DEATH OF MR. NETTLESHIP—POGGI SLAIN BY A FALLING STONE—CUMANI DISAPPEARS—DR. SCHNÜRDREHER'S END—THE DEATH OF EMILE REY.

MONT BLANC was free from accidents until 1820, and then three Chamoniards lost their lives while conducting Dr. Hamel by the, at that time, usual route. There is little in this matter to distinguish it from a number of similar occurrences which have happened subsequently on Mont Blanc and elsewhere, but from the almost romantic circumstances under which the remains of the victims came to light, after having been entombed more than 40 years in the ice, the *affaire Hamel* has attained an unusual degree of notoriety.

The Hamel accident (1820).—Dr. Hamel started from Chamonix on August 18, 1820, with two young Englishmen (Messrs. Durnford and Henderson), to make an ascent of Mont Blanc. They were detained on the 19th at the Grands Mulets by bad weather, and during that day a considerable quantity of snow seems to have fallen on the upper part of the mountain, though not down below. By 8.20 a.m., on the 20th, they got to the Grand Plateau; at 9 they continued the march; and at 10.30 they were somewhere upon the '*ancien passage*,' above the level of the Dôme du Goûter (14,210 feet), and not much below the top of the Rochers Rouges, mounting in zigzags to avoid crevasses, and to ease the gradients. From the several accounts which have been rendered,[1] it would appear that at the

[1] One by Mr. Durnford in the *New Monthly Magazine*, and another by Dr. Hamel in the *Bibliothèque Universelle*, both written and published shortly after the occurrence; and two others by Joseph-Marie Couttet, the principal guide, more than forty years later. There are many differences in these narratives.

moment of the accident a guide named Auguste Tairraz was leading, and cutting or making steps, followed by four others, Pierre Carrier, Pierre Balmat, Julien Devouassoux, and Joseph-Marie Couttet. Half-a-dozen paces behind came the three tourists with three more guides. They had just faced about, and were going obliquely across the slope, making a deep groove in the newly-fallen snow. Mr. Durnford says[1]:—

"As we were crossing obliquely the long slope above described, which was to conduct us to the Mont Maudit,[2] the snow suddenly gave way beneath our feet, beginning at the head of the line, and carried us all down the slope to our left. I was thrown instantly off my feet, but was still on my knees and endeavouring to regain my footing, when, in a few seconds, the snow on our right, which was of course above us, rushed into the gap thus suddenly made, and completed the catastrophe by burying us all at once in its mass, and hurrying us downwards towards two crevasses about a furlong below us, and nearly parallel to the line of our march. The accumulation of snow instantly threw me backwards, and I was carried down, in spite of all my struggles. In less than a minute I emerged, partly from my own exertions, and partly because the velocity of the falling mass had subsided from its own friction. I was obliged to resign my pole in the struggle, feeling it forced out of my hand. A short time afterwards, I found it on the very brink of the crevasse. This had hitherto escaped our notice, from its being so far below us, and it was not until some time after the snow had settled, that I perceived it. At the moment of my emerging, I was so far from being alive to the danger of our situations, that on seeing my two companions at some distance below me, up to the waist in snow, and sitting motionless and silent, a jest was rising to my lips, till a second glance showed me that, with the exception of Mathieu Balmat, they were the only remnants of the party visible. Two more, however, being those in the interval between myself and the rear of the party, having quickly reappeared. I was still inclined to treat the affair rather as a perplexing though ludicrous delay, in having sent us down so many hundred feet lower, than in the light of a serious accident, when Mathieu Balmat cried out that some of the party were lost, and pointed to the crevasse, which had hitherto escaped our notice, into which, he said, they had fallen. A nearer view convinced us all of the sad truth. The three front guides, Pierre Carrier, Pierre Balmat, and Auguste Tairray, being where the slope was somewhat steeper, had been carried down with greater rapidity and to a greater distance, and had thus been hurried into the crevasse, with an immense mass of snow upon them, which rose nearly to the brink. Mathieu Balmat, who was fourth in the line, being a man of great muscular strength, as well as presence of mind, had suddenly thrust his pole into the firm snow beneath, when he felt himself going, which certainly checked, in some measure, the force of his fall. Our two hindermost guides were also missing, but we were soon gladdened by seeing them make their appearance, and cheered them with loud and repeated hurrahs. One of these, Julien Devouassoux, had been carried into the crevasse, where it was very narrow, and had been thrown with some violence against the opposite brink. He contrived to scramble out without assistance, at the expense of a trifling cut on the chin. The other, Joseph Marie Couttet, had been dragged out by his companions, quite senseless, and nearly black from the weight of snow which had been upon him. In a short time, however, he recovered. It was long before we could convince ourselves that the others were past hope, and we exhausted ourselves fruitlessly, for some time, in fathoming the loose snow with our poles. . . The first few minutes, as may

[1] In the *New Monthly Magazine*.

[2] This is a mistake,—they were not going near Mont Maudit. Mr. Durnford probably meant "going towards, or in the direction of" Mont Maudit.

be readily imagined, were wasted in irregular and unsystematic attempts to recover them. At length, being thoroughly convinced, from the relative positions of the party when the accident happened, that the poor fellows were indeed in the crevasse, at the spot pointed out by Mathieu Balmat, the brother of one of them—in our opinion, only one thing remained to be done, and that was to venture down upon the snow which had fallen in, and, as a forlorn hope, to fathom its unknown depths with our poles. After having thus made every effort in our power for their recovery, we agreed to abandon the enterprise altogether, and return to the Grand Mulet. The guides having in vain attempted to divert us from our purpose, we returned to the crevasse, from which, during the consultation, we had separated ourselves to a short distance, and descended upon the new-fallen snow. Happily it did not give way beneath our weight. Here we continued, above a quarter of an hour, to make every exertion in our power for the recovery of our poor comrades. After thrusting the poles in to their full length, we knelt down, and applied our mouth to the end, shouting along them, and then listening for an answer, in the fond hope that they might still be alive, sheltered by some projection of the icy walls of the crevasse; but, alas! all was silent as the grave, and we had too much reason to fear that they were long since insensible, and probably at a vast depth beneath the snow on which we were standing. We could see no bottom to the gulf on each side of the pile of snow on which we stood; the sides of the crevasse were here, as in other places, solid ice."

It is not possible to tell, from the narratives of this affair, where the avalanche was started. Mr. Durnford mentions being hurried 'downwards towards two crevasses about a furlong below.' Joseph-Marie Couttet in one of his accounts says that he was carried two hundred mètres below some of the others; and in another place he speaks of going down four hundred feet in a minute, and then of flying through the air. The probability seems to be that the five guides who were in front were carried a considerable distance down the slope and then shot over the ice cliffs, which are seen near the bottom of the engraving upon page 20,[1] and that the tourists and the three other guides did not go over the cliffs.[2] The three leading men were lost, and completely buried up in the crevasse by the snow which they had dislodged; and Joseph-Marie Couttet and Julien Devouassoux very narrowly escaped the same fate. The former is said to have been nearly black in the face when he was dragged out.

Ten years later, when conducting Mr. Wilbraham by the 'corridor' route, Couttet pointed in the direction of the crevasse which had nearly swallowed him up, and said, "Ils sont là." "It was a melancholy reflection," remarked the tourist, "and all the guides seemed to feel deeply the loss of their ill-fated comrades; who will in all probability remain imbedded beneath the Grand Plateau till the day of judgment." But at that time (1830), the bodies were no doubt already a considerable distance from the spot where the accident occurred, for the dismembered remains of the three unfortunates commenced to re-appear at the *lower* end of the Glacier des Bossons in 1861, more than four miles away, in a direct line, from the place

[1] In this engraving, the '*ancien passage*' is upon the right hand. The view was taken from the Refuge Vallot.

[2] The late Mr. J. J. Cowell, who interviewed J.-M. Couttet, says (*Alpine Journal*, vol. i, p. 333) that he was positive the whole party was carried down no less than 1200 feet. This agrees with Mr. Durnford's statement that, before the avalanche was started, they had got higher than the Dome du Goûter.

where they perished, and must have travelled downwards on an average at the rate of 500 feet per annum.

"Ah! I never could have thought," said Joseph-Marie, who was still living when these vestiges of the catastrophe were discovered, "Who would have thought that I should have shaken the hand once more of my brave comrade, the *pauvre* Balmat!" Fragments of skulls (one of which was identified as that of Pierre Balmat), a lower arm with its hand, fragments of knapsacks, a felt hat (worn by Pierre Carrier), a crampon, a tinware lantern, shreds of clothing, and a cooked leg of mutton, were amongst the objects which came to light first; and in 1862 a multitude of other articles which were collected placed it beyond all doubt that these were indeed relics of the long-lost victims of the *affaire Hamel*. The major part of the remains were interred, with ceremony, at Chamonix, but some few were incorporated with the Museum at Annecy.

Accident on the Italian side of the Col du Géant (1860).—The next disaster in the range of Mont Blanc occurred on the 15th of August, 1860, and caused the death of three Englishmen and a Chamonix guide. The cause was more or less obscure. Two guides escaped, and were the only persons who could speak about it; and, as there were certain circumstances which were not to their credit, one can understand their reticence. The points that appear certain are that the party arrived at the summit of the Col at a late hour of the day, and when descending to Courmayeur took to a snow-slope by the side of the rocks which are usually followed. A guide led and another brought up the rear, *holding* the rope by which the others were attached; and, when a slip occurred, they let go the rope. "All that is known to the public is that the two men who led and followed the party let go the rope and escaped, while the three Englishmen and Tairraz went to destruction. Tairraz screamed, but, like Englishmen, the others met their doom without a word of exclamation."[1] There is no obscurity about the accident which comes next in chronological order.

Ambroise Couttet walks into a crevasse (1864).—Two Austrian gentlemen had made a successful ascent of Mont Blanc on August 9, and were descending to the Grand Plateau. "A young porter, Ambroise Couttet, was some distance in front, not attached to the rope. He took a direction too near the edge of the plateau; and, just as the guide of the party shouted to warn him of his danger, he was engulfed in a crevasse, before the eyes of the others. The crevasse was 90 feet of sheer depth, and the rope was not long enough to reach the bottom." Two following parties gave the use of their ropes. "The guides approached the edge of the crevasse and leant over. They saw the traces of the man's fall, and called, but received no answer. The cold on the plateau was intense, and the guides feeling convinced that the man was dead continued their route.

"The same evening a party of guides left Chamouni to recover the body. Two, whose names should be mentioned, Michel Payot and

[1] *Hours of Exercise in the Alps*, by John Tyndall, 1871, p. 23.

Simon Pierre Benoît, descended 90 feet to the turn of the crevasse, but could get no further from the badness of the air (?). They lowered a bottle 100 feet more, which came up covered with hair (?). There is now no hope of recovering the body."[1] *Alpine Journal*, vol. i, p. 384, quoted from a letter published in the *Times*.

The death of Mr. Young (1866).—"On the 23rd of August, 1866, Sir George Young and two of his brothers reached the summit of Mont Blanc without guides, and at about 11.30 a.m. prepared to descend. They had ascended by the Bosse, and in passing the point where the route of the '*ancien passage*' lay immediately below them they descended a little, in order to look for tracks in that direction. They soon, however, discovered that the whole surface in that direction was hard and icy, and that they must retrace their steps, and continue along the summit ridge towards the usual line of descent to the Mur de la Côte. In turning, one of the brothers slipped, and dragged the others down with him. They slid for some distance, fell over a precipice some 15 or 20 feet high, slid again a little way farther, and were then stopped by the soft snow. Sir George and one of his brothers were unhurt by their fall, but the youngest unhappily pitched on his head and broke his neck." *Alpine Journal*, vol. ii, p. 382. This lamentable affair was followed shortly afterwards by another and more disastrous one.

Captain Arkwright and three others killed by an Avalanche (1866).—"On the 13th of October, 1866, Captain Arkwright, with his guide Michel Simond, two porters, François and Joseph Tournier, and accompanied by Silvain Couttet of the Pierre Pointue, and a servant from one of the Chamonix hotels, both of whom were apparently volunteers, left the Grands Mulets at 5.30 a.m. They took the route of the '*ancien passage*,' and had ascended a little way, when an avalanche fell from above. Couttet saw what was coming, and, along with the servant, managed to get out of the way. Captain Arkwright and his guides either remained immovable, or tried to escape in the wrong direction: they were overwhelmed by the avalanche, and no trace of them was discernable by the survivors."[2] *Alpine Journal*, vol. ii, pp. 383-4.

Avalanches of the description that destroyed this party fall frequently from the ice-cliffs which are partially shewn on the right hand of the engraving on page 20, and their *debris* sometimes extends quite one-third way across the Grand Plateau. While ascending by the *ancien passage*, there must always be some risk from them.

[1] Michel Payot, who is still alive and on the active list of guides, was awarded a *médaille d'honneur* and a diploma by the Ministry of the Interior for his meritorious conduct on this occasion. A few weeks earlier, he had been travelling with Mr. Adams-Reilly and myself. See *Scrambles amongst the Alps*, chap. xi.

[2] A long account of this affair is given in *Oscillations des quatre Grands Glaciers*, by Venance Payot, 1879; from which it appears (amongst other differences from the account in the *Alpine Journal*) that the body of François Tournier *was* discovered by Sylvain Couttet among the blocks of ice on the Grand Plateau, before he descended, and that the bodies of the two other Chamoniards were recovered at a later date. A fresh avalanche of a similar nature put an end to the search, and the body of Capt. Arkwright was not found.

Loss of Mrs. Marke and Olivier Gay at the top of the Corridor, at the beginning of Aug. 1870.—Mr. and Mrs. Marke set out with Miss Wilkinson and two Valaisan guides to make the ascent of Mont Blanc. They took a youth as porter at the Grands Mulets, named Olivier Gay. At the top of the Corridor the ladies were fatigued, and remained behind with the porter, while Mr. Marke and the guides continued the ascent. The latter were half way up the Mur de la Côte when they heard piercing shrieks, and returning with all haste found that Mrs. Marke and Olivier Gay had disappeared in a crevasse. The ladies had been unable to bear the cold, and wished to move about. The porter offered his arm to Mrs. Marke, and very shortly afterwards both broke through a snow-bridge and were swallowed up in a crevasse. The bodies were not recovered.

The Editor of the *Alpine Journal* made the following comments on this occasion. "The porter gives one lady his arm, and walks across a snow-field notoriously full of crevasses. The catastrophe which occurred was that which every experienced traveller would have predicted as highly probable. I will not enquire whether, in this case, any blame attaches to the traveller; but it is difficult to imagine that anyone with the slightest pretensions to act as *guide* could have committed the folly to which it was owing that the porter lost his own life and that of his companion." *Alpine Journal*, vol. v, p. 190.

Eleven persons perish near the Summit (1870).—This catastrophe was the worst thing of its kind that has happened on Mont Blanc. The entire caravan of eleven persons perished. The victim tourists were unknown at Chamonix; there was no one interested in writing an account of this ghastly affair, and anything like one can only be constructed by reference to a diversity of sources.

On August 26, 1870, two Englishmen (Messrs. Stogdon and Marshall) came down to Chamonix, having escaped, so to speak, by the skin of their teeth from being lost on the summit of Mont Blanc. They had ascended by the ridge of the Bosses, and intended to come back another way. Being caught in bad weather they returned in their track, through inability to descend in any other direction. It was a narrow shave. Their two guides, though not in their first youth or gifted with great agility, were sturdy men—seasoned vessels. One of them, Moritz Andermatten, had been up Mont Blanc sixteen times. The other was Peter Taugwalder, *père*, of Zermatt. "On the night of our return," said Mr. Stogdon, "an American gentleman named Randall asked me to let him come into our sitting-room and talk over Mont Blanc. The consequence was I did not get to bed till two. I found in Mr. Randall, in spite of his fifty years, the most intense mountain enthusiast I ever had the pleasure of meeting. . . To see, not necessarily to climb Mont Blanc had been the dream of his life, and he had come over at last to fulfil it." The story he listened to seems to have had a stimulating rather than a deterrent effect, and the next Mr. Stogdon heard of Mr. Randall was that he, along with ten others, perished close to the top of the mountain, early in the following month.

Mr. Randall, apparently, met casually at Chamonix another American, Mr. J. Bean, and the Rev. G. McCorkindale. It does not seem that any one of the three had mountain experience. They determined, however, upon an ascent of Mont Blanc, and setting out on September 5, with three guides and five porters, passed that night at the inn on the Grands Mulets.[1] The next day several persons in the Valley of Chamonix endeavoured to watch their progress through telescopes. The weather aloft was bad. The wind is said to have been frightful. Even from below the snow was seen whirling about. In an opening in the clouds, about 2.15 p.m., the whole eleven were caught sight of for a short time near the rocks called the Petits Mulets,[2] and it was noticed from time to time that they had to throw themselves down to escape being carried away by the wind. A little later the clouds again parted, and they were perceived coming down near the same place. After that nothing more was seen of the top of the mountain for eight days.

No one returned, and on the 7th fourteen Chamoniards started, to try to learn something, but they did not even reach the Grands Mulets. Snow was falling heavily 2000 feet lower down, and drove them back. On the 15th the weather began to clear, and five black dots were discovered a little to the left of the Petits Mulets. Twenty-three men set out from Chamonix the next day, and on the 17th found Mr. McCorkindale and two of the porters 750 feet below the summit, lying, so they expressed it, here and there, with their heads right way uppermost, but with their clothes somewhat torn, as if they had slipped and fallen. About three hundred feet higher they came upon Mr. Bean and another porter, sitting down, the former with his head leaning on one hand and the elbow on a knapsack; ropes coiled up, bâtons, axes, and knapsacks round about them, one still containing some meat and bread and cheese. Upon Mr. Bean a note-book was found containing the following entries, and little except conjectures can be added to the information they give.

Tuesday, September 6. Temperature 34 deg. F., at 2 a.m.[3] I have made the ascent of Mont Blanc with ten persons; eight guides, Mr. McCorkindale, and Mr. Randall. We arrived on the summit at half-past two. Immediately after leaving it I was enveloped in clouds of snow. We passed the night in a grotto excavated out of the snow, affording very uncomfortable shelter, and I was ill all night.

Mont Blanc, September 7. If any one finds this note-book, I beg that it may be sent to Mrs. H. M. Bean, Jonesborough, Tennessee, United States of America.

My dear Hessie,—We have been on Mont Blanc for two days in a terrible snowstorm. We have lost our way and are in a hole scooped out of the snow at a height of 15,000 feet. I have no hope of descending. Perhaps this book

[1] As it was late in the season, the servants at the Grands Mulets had already come down.

[2] For the position of the Petits Mulets, see the view of Mont Blanc from the Brevent.

[3] The entry 'Temperature 34 deg. F., at 2 a.m.' was doubtless made at the Grands Mulets before departure. All the rest seems to have been written on the spot where he was found. The concluding paragraph, perhaps, should have been dated September 8.

may be found and forwarded. (Here followed some instructions on private affairs.) We have no food; my feet are already frozen, and I am exhausted; I have only strength to write a few words. I die in the faith of Jesus Christ, with affectionate thoughts of my family; my remembrances to all. My effects are in part at the Hotel Mont Blanc, and partly with me in two portmanteaux. Send them to the Hotel Schweitzerhof at Geneva; pay my bills at the hotel, and heaven will reward your kindness.

And lower down, in nearly illegible writing:—

Morning. Intense cold; much snow, which falls uninterruptedly; guides restless.

All the five corpses were hard frozen. They were put into sacks, and dragged down the glaciers. It took three days to transport them to Chamonix. The bodies of the six others have not been discovered. Mr. McCorkindale was buried in the graveyard of the Parish Church, and bits of heather find their way from time to time to the tomb of a man who was greatly beloved.[1]

GRAVE OF REV. GEORGE McCORKINDALE.

In referring to this tragedy, Mr. Leslie Stephen remarked, "With a really experienced guide, I cannot but believe that the party who were lost must have been able to find their way. They might have suffered frost-bites, or even lost the lives of some of the weaker members of the party; but that eleven men should be so bewildered as actually to be incapable of discovering a route, implies a singular want of that instinct for which a good guide is generally remarkable, and which all tolerable guides ought to possess." While concurring with Mr. Stephen's remarks, I think it is not at all unlikely that the whole of the party *were* badly frost-bitten, and from that cause were *unable* to proceed.

The death of Professor Fedchenko by the side of the Glacier du Tacul in 1873, when upon an ordinary excursion to the Col du

[1] Mr. Bean is buried near Mr. McCorkindale. The following inscription is over his grave. James G. Bean of Batt=Md. U.S. of America.—Perished near the summit of Mount Blanc about the 7th of September, 1870, aged 54.—On his person was found a diary and among the last words which he pencilled to his wife were these: "I die in good faith in Jesus Crist and hope we will meet in heaven."

Géant, was a deplorable occurrence, arising from the tourist being unable to withstand bad weather, at a low level, even for a single day. An undue disposition was shewn at the time to throw blame upon a Chamonix guide and porter who accompanied him.[1] Fedchenko was a man of middle age, who had been in Central Asia, and acquired there some experience in mountain-travel; and he was strong in appearance, but he was evidently without much stamina. The guide—Joseph Payot—was a young man between 23 and 24 years of age; the porter, his brother Prosper, was between 22 and 23.

"M. Fedchenko started from Chamonix at 5 a.m., intending to visit the col and return the same evening. He breakfasted at the Montanvert, whence he set forth at 8 a.m. He there procured his provisions, for which, with his breakfast, he paid 26 francs. The party took the ordinary route, and reached the snow slopes about the *séracs* without any unusual incident. The passage of the *séracs* always involves a good deal of close attention to details, and it was only on reaching the *névé* above that they noticed that the day, which, when they started from the Montanvert, was exceptionally fine, was clouding over. They did not, however, anticipate any very severe weather, and pursued their way; but when they had nearly reached the rocks known by the name of 'La Vierge,' from which it would have taken them, under ordinary circumstances, about an hour to reach the col, a storm of wind, rain, sleet, and snow burst upon them with extreme suddenness and violence. Their first idea was to push on, cross the col, and reach Mount Fréty on the southern side; but a very few minutes sufficed to show them that it was hopeless to attempt in such weather to toil up the heavy snow slopes which lead to the col, added to which the storm prevented them from telling in what direction they were going, and the chances were greatly against their hitting the place of passage even if they could breast the ascent. They turned, a little after 2 p.m., to retrace their steps. The tracks they had made in the snow were already obliterated, and were never found again, except here and there in the middle of the descent of the *séracs*. They were soon wet to the skin and half frozen by the cold wind. M. Fedchenko was already tired, and the cold and wet told heavily upon him. Partly in consequence of his exhausted state, partly in consequence of the mist and drift in which they were enveloped, and which prevented them from seeing any distant object by which to direct themselves, they were a long time in reaching and again in descending the *séracs;* and it was necessary to give an increasing amount of help to the traveller, who was not a light man. By the time they arrived at the foot of the *séracs* it was nightfall—the day was the 14th of September—and by this time M. Fedchenko was so exhausted that the two Payots had to carry him on their backs, turn and turn about. . . About 9 p.m. they reached the few scattered rocks which compose the moraine known as La Noire—a moraine totally insufficient in size to afford any protection against the weather, but which still gave them rock instead of ice to rest upon. By this time Joseph Payot, who is the less strong of the two brothers, was almost as exhausted as M. Fedchenko, and was himself unable to proceed further. They remained in this dreadful position, exposed, without any shelter, to wind, rain, and snow from 9 p.m. to 2 a.m. There was no moon, and the night was dark, with clouds and bad weather. Prosper Payot, who was the strongest of the party, remained upon his feet all the time, moving about, and, as long as he could, he kept his brother and the traveller upon their feet; but at length exhaustion became supreme. The traveller sank upon the rock, and despite every effort Prosper could make, fell into that fatal sleep of frozen exhaustion from which there is no awaking. He had long been in this condition, though

[1] Taking their youth and inexperience into account they appear to have behaved remarkably well.

may be found and forwarded. (Here followed some instructions on private affairs.) We have no food; my feet are already frozen, and I am exhausted; I have only strength to write a few words. I die in the faith of Jesus Christ, with affectionate thoughts of my family; my remembrances to all. My effects are in part at the Hotel Mont Blanc, and partly with me in two portmanteaux. Send them to the Hotel Schweitzerhof at Geneva; pay my bills at the hotel, and heaven will reward your kindness.

And lower down, in nearly illegible writing:—

Morning. Intense cold; much snow, which falls uninterruptedly; guides restless.

All the five corpses were hard frozen. They were put into sacks, and dragged down the glaciers. It took three days to transport them to Chamonix. The bodies of the six others have not been discovered. Mr. McCorkindale was buried in the graveyard of the Parish Church, and bits of heather find their way from time to time to the tomb of a man who was greatly beloved.[1]

GRAVE OF REV. GEORGE McCORKINDALE.

In referring to this tragedy, Mr. Leslie Stephen remarked, "With a really experienced guide, I cannot but believe that the party who were lost must have been able to find their way. They might have suffered frost-bites, or even lost the lives of some of the weaker members of the party: but that eleven men should be so bewildered as actually to be incapable of discovering a route, implies a singular want of that instinct for which a good guide is generally remarkable, and which all tolerable guides ought to possess." While concurring with Mr. Stephen's remarks, I think it is not at all unlikely that the whole of the party *were* badly frost-bitten, and from that cause were *unable* to proceed.

The death of Professor Fedchenko by the side of the Glacier du Tacul in 1873, when upon an ordinary excursion to the Col du Géant, was a deplorable occurrence, arising from the tourist being unable to withstand bad weather, at a low level, even for a single day. An undue disposition was shewn at the time to throw blame upon a Chamonix guide and porter who accompanied him.[1] Fedchenko was a man of middle age, who had been in Central Asia, and acquired there some experience in mountain-travel; and he was strong in appearance, but he was evidently without much stamina. The guide—Joseph Payot—was a young man between 23 and 24 years of age; the porter, his brother Prosper, was between 22 and 23.

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still breathing, and Prosper had already had to strike, kick, and shake his brother to prevent him also from falling asleep, when the younger brother came to the conclusion that the only chance of saving any life besides his own—perhaps his own also—was to attempt to walk on. He got his brother into motion with infinite difficulty, and with great difficulty kept him from falling, till, little by little, circulation and warmth to some degree revived, and between 4 and 5 a.m. on the 15th they both reached the Montanvert in a very exhausted and pitiable condition. . . It is difficult to see what more the two men could have done after they once became involved in the difficulty, or of what avail it would have been to stay longer on the glacier than they did. It is true that the narrative comes from the men themselves; but I see no reason to doubt it. The story was told me by Prosper Payot simply, quietly, and modestly; and there are many circumstances to bear it out." *Alpine Journal*, vol. vi, pp. 308-9, (letter from Mr. Justice Wills).

Mr. J. G. Marshall, and the guides **Johann Fischer**, of Zaun near Meyringen, and **Ulrich Almer** of Grindelwald, while descending the **Brouillard Glacier** by moonlight on **Sept. 1, 1874**, broke through a snow bridge near the edge of the glacier, and fell into a crevasse. The two former were killed. Almer escaped with slight injuries. Mr. Leslie Stephen, who examined the place with Melchior Anderegg shortly after the accident, said—

"that the crevasse into which they fell was not five minutes' walk from the moraine. Fischer was leading, and Almer was last, and just after a question and the answer that it was almost midnight, a bridge of *firn* or *nêvé* broke below their feet, and all three fell almost simultaneously into the schrund. The bridge must have been 20 feet wide, and presented no sign of its presence beyond a small hole by which Almer afterwards escaped, and it would not suggest to them any doubt of its stability. Mr. Marshall and Fischer fell about 30 feet into the lower part of the crevasse, which may have been 5 feet wide, and upon hard ice. Mr. Marshall's skull was fractured and his death instantaneous; and Fischer's injuries were such that he could not have lived many minutes. Almer seems to have fallen a less distance upon a kind of bank or shelf, which made up the greater part of the profile of the schrund and upon snow; possibly too his fall was broken by the fragments of the bridge which fell under him. Then he was probably dragged by the rope into the deeper part after the others."

The next catastrophe also occurred on the south side of Mont Blanc, in July, 1882.

Prof. F. M. Balfour, of Cambridge, when attempting to climb the Aiguille Blanche de Peuteret, was killed along with his guide **Johann Petrus**, of Stalden. The exact cause of the accident was not ascertained. Mr. C. D. Cunningham, who was in the neighbourhood at the time, said that—

"On the 14th inst. Mr. Balfour crossed the Col du Géant, and in descending the Italian side the idea first occurred to him of attempting the Aiguille Blanche de Peuteret. . . This peak, which had never been ascended, is a part of one of the buttresses of Mont Blanc, and is joined to the *massif* of the mountain by an extremely steep snow arête. My guide Emile Rey had previously attempted the peak, and was able to give Mr. Balfour so many details as to the probable line of ascent that he proposed that we should both accompany him. This Emile strongly advised me not to do, as he considered the snow to be in a dangerous condition. Mr. Balfour, however, did not agree with him as to the state of the snow, and next morning started with Petrus for the Aiguille, accompanied by a porter to carry blankets and wood as far as their sleeping place on the rocks.

"This was on Tuesday, the 18th, and as it was a new ascent and a difficult one, it was thought probable he might be absent two nights, and return to Courmayeur on Thursday afternoon. As he did not reappear, it was supposed that he must have crossed Mont Blanc to Chamonix, or, having found the ascent more difficult than he expected, gone down to the Châlets de Visaille for more provisions. On Friday Mr. Bertolini and Mr. W. M. Baker, an Englishman who was staying in the hotel, became seriously alarmed. Finding on Saturday he had not been heard of either at Chamonix or the Châlets de Visaille, they sent out a search-party, accompanied by the honorary chaplain, the Rev. H. S. Verschoyle, there being some hope of the poor men being still alive. Early on Sunday morning, on reaching the rocks between the Glacier du Brouillard and the Glacier du Fresnay, they saw what appeared to be the bodies of Mr. Balfour and Petrus, both partially covered with snow. . . It is clear that Mr. Balfour's death was instantaneous. As there was a comparatively small quantity of fresh snow about the place where they lay, we presume that it was not an avalanche which caused their death, but that one of them slipped, and the other had not sufficient strength to hold his companion. As the provisions which they had left at the sleeping place were untouched, the accident must have taken place on Wednesday, the 19th, just a week ago. But it is not certain whether they fell in the descent or ascent of the Aiguille." *Alpine Journal*, vol. xi, pp. 90-91.

In a communication to the *Alpine Journal* by Mr. Walter Leaf, it was stated that "Mr. Balfour's neck was broken and his skull fractured in three places. Petrus's right arm was broken between the elbow and the shoulder, and so were his ribs on the right side; a fracture of the skull was, in his case, probably received during the very difficult and dangerous descent of the bodies to Courmayeur. Both showed some bruises and abrasions, but no other serious external wound; their hands were scratched only on the outside, so that they could have made no effort to save themselves by grasping anything. The clothes were torn, but not to any great extent; nor was the rope broken. These appearances seem to point to a fall over rocks, but through a comparatively small height."

M. Guttinger, of Geneva, **was killed by falling rocks on the Grandes Jorasses**, on **July 11, 1884.** It is said that he started "from Courmayeur accompanied by the guides J. M. Rey and Julien Proment to sleep at the hut on the Grandes Jorasses, intending to complete the ascent next day. About 4 p.m. the party came to a *couloir* of about 65 feet, which had to be ascended in order to gain the shelf on which stands the hut. . . The guides resolved to go up by the rocks and to let down a rope by which the traveller could mount without touching the ice. They warned M. Guttinger to shelter himself under an overhanging rock," lest stones might "fall upon him while they were climbing up. M. Guttinger took this advice, and Rey, aided by Proment, began to climb the rocks; but seeing his traveller leaving his shelter to see how the obstacle was being overcome, Proment called out to him to go back. The unfortunate traveller is stated to have replied that he was too curious to see how the guides were getting on to allow him to do so. Rey went on climbing up, when a stone began to move, carried others with it, and all fell down

towards M. Guttinger, who, despite the efforts of Proment, was not able to get out of the way, and was struck by huge blocks on the head, shoulder, and right leg. His guides managed to carry him down some way, and Rey then went off to get help. Proment remained with the injured man, who was able to converse, and who, though very much hurt, did not seem in immediate danger. But very suddenly, about 9 p.m., he made an attempt to speak, and immediately breathed his last."[1] *Alpine Journal*, vol. xii, pp. 108-9.

The Abbé Chifflet (bursar of the Carthusians at Lyons), who was **killed on the eastern slopes of Les Courtes, in July, 1885,** may, like M. Guttinger, be said to have courted his fate. He left the Châlet of Lognan on July 4, with two guides, Joseph and Clément Devouassoux (father and son), to cross from the upper basin of the Argentière Glacier to the Glacier de Talèfre. Their non-arrival either at the Montanvert or at Lognan raised doubts, and on July 8 a party of guides went in search, and discovered all three, lying dead upon the Glacier d'Argentière. "The Abbé and the elder guide were still roped together, though their bodies were much mutilated; the younger guide, with a fragment of rope still round him, lay about forty yards off." The evil character of the ridge they proposed to cross was well known.

Gratien Brunod, a guide of Courmayeur, **lost his life on Aug. 12, 1890, at the top of the Col du Géant.** He was accompanying two members of the Italian Alpine Club across the pass; and, whilst they were resting on the top, he went aside to get some water a few yards from the cabane, slipped and fell for about a thousand feet down a *couloir* on to the Glacier de Toule, and was killed on the spot.

Count Umberto di Villanova, his guides Jean-Joseph Maquignaz and Antonio Castagneri, and two porters disappeared in August, 1890, on the ridge which connects the **Dôme du Goûter** with the **Aiguille de Bionnassay.** This party left the Châlet of la Visaille (near the foot of the Italian Glacier de Miage) on August 18, intending, it is supposed, to ascend Mont Blanc by the Dôme route. Since that time they have not been heard of. Shortly after they left, a furious storm broke on Mont Blanc, and blotted them out. For some days their disappearance was not noticed, and, as bad weather continued, no search could be made for a long time. Then prolonged efforts were made to ascertain their fate. Their tracks were discovered, and followed up to the ridge at the head of the Glacier du Dôme, which connects the Dôme du Goûter with the Aiguille de Bionnassay, and there they ceased. What happened there is unknown. The ridge has exceedingly steep slopes upon each side. Anything falling down them would go a thousand feet at a stride, and impetus would perhaps carry it a thousand feet further. Some of the Val Tournanche men who were in the searching parties thought that the

[1] It was stated in the *Echo des Alpes* that M. Guttinger was "très fort, très ferme, intrépide, agile sur le rocher, solide sur la neige et la glace, sérieux, et *surtout prudent*."

Count must have slipped, and others consider it is not unlikely that the whole were blown off the ridge in a squall. Down below, on one or the other side, this unhappy party lies buried; and at some future date their remains will no doubt be discovered, either upon the Italian Glacier de Miage, or upon the Glacier de Bionnassay.[1]

Herr Rothe and Michel Simond killed on the Petit Plateau by an ice-avalanche (Aug. 21, 1891).

"On August 20 a party consisting of Herr Rothe of Brunswick, Count de Favernay, three guides, and two porters reached M. Vallot's hut" (observatory) "on the Bosses du Dromadaire. The weather the following morning did not allow them to complete the ascent of Mont Blanc, and in the afternoon of the 21st they began the downward journey. Their party was increased by four of the men[2] employed in connection with M. Janssen's proposed observatory. As they descended from the Grand towards the Petit Plateau a mass of ice and snow falling from the Dôme du Goûter started an avalanche, which caught those in rear and swept five of them—Herr Rothe, his guide Michel Simond, the porter Armand Comte, Count de Favernay, and one of his guides into the great crevasse. All but the first two were extricated, Comte with serious injuries, but the bodies of Herr Rothe and Simond were only recovered a few days later." *Alpine Journal*, vol. xv, pp. 539-40.

Ice-avalanches frequently fall from the ice-cliffs of the Dôme du Goûter on to the Petit Plateau, but they seldom if ever *extend right across it*; and the proper course to adopt, when crossing the Petit Plateau, is to sweep round to the east and get as far as possible away from the Dôme du Goûter.

Dr. Jacottet, of Chamonix, died rather suddenly at the Vallot Observatory on **Sept. 2, 1891,** under the circumstances mentioned upon page 73. Dr. Egli-Sinclair, of Zurich, writing in the *Annales de l'Observatoire Météorologique du Mont Blanc*, 4to, Paris, 1893, p. 121, attributes his death to *Mal de Montagne*.[3]

The death of Mr. Nettleship (1893).—Mr. Richard Lewis Nettleship, tutor of Balliol College, Oxford, left Chamonix on August 23, 1893, for the Col de Voza, intending to ascend Mont Blanc by way of the Aiguille du Goûter and the Bosses du Dromadaire. He took as guides Alfred Comte and Gaspard Simond. They left the Col de Voza at 4 a.m. on the 24th, but did not reach the Aiguille du Goûter until 1 p.m. Though the morning was fine, clouds gathered, and there were indications of bad weather, before mid-day. The party, however, continued upwards, intending to stop for the night at the Refuge Vallot. An hour after leaving the Aiguille a storm broke upon them, they became bewildered, wandered about for several hours, and at last stopped, dug a hole in the snow, and remained in it all night. According to the statement of the guides, Mr.

[1] Jean-Joseph Maquignaz and Antonio Castagneri were the two leading Italian guides. A portrait of Maquignaz is given in my *Guide to Zermatt and the Matterhorn*.

[2] M. Imfield says *five* workmen went down. See p. 72.

[3] "Enfin, la mort de Jacottet n'a-t-elle pas été causée par la même maladie? C'est mon avis. La diagnose d'autopsie annonçait le commencement d'une inflammation des poumons et celle du cerveau. Je me permets de nier l'inflammation du cerveau pour des causes que je ne peux citer ici. Le cours rapide de l'inflammation pulmonaire ne peut être expliqué que par l'influence du mal de montagne sur l'affaiblissement du cœur et sur l'énergie du système nerveux de ce jeune homme, autrefois si robuste."

Nettleship was in good spirits, assisted in digging the hole, and even sang during the night. They had sufficient food and wine, but no extra clothing.

"The storm continued the whole of the night. On the morning of the 25th it was still snowing hard, and all tracks were obliterated. The guides advised Mr. Nettleship to remain where he was, on the chance of a change of weather, but Mr. Nettleship urged that it was idle to remain there and die like cowards, and that they must make an effort to get away. He therefore started, the guides following him. They proceeded some little distance, when Mr. Nettleship stumbled and became unsteady. The guides offered him wine and brandy, which he refused. He then cried out and fell forward,

MR. NETTLESHIP'S GRAVE.

uttering some words in English, after which he took each guide by the hand, bade them good-bye, closed his eyes and expired.

"The guides remained with him for a short time, and then placing his ice-axe upright in the snow to mark the place where he lay, they left him. After a short time the weather cleared a little, the guides caught sight of the Vallot hut, made for it, and stayed there all the night of Thursday the 25th.

"Friday the 26th was fine, and the guides returned to the Dôme, where the body lay. They then descended to the Grands Mulets, whence Alfred Comte brought the news to Chamonix, Simond remaining at the Grands Mulets."

Twelve men were at once sent off, they recovered the body, and it was interred in the English Churchyard, on the south side of the

church. Mr. C. E. Mathews, the writer of the letter in the *Times* from which the above quotation is made, remarked that "it was the extreme of imprudence for the guides to have left the hut on the Aiguille du Goûter in the face of the impending storm, and it was a grave error in judgment that the party, when they encountered the *tourmente* on the Dôme, did not instantly return to the Aiguille before the ascending track had been obliterated." The Society of Guides did not, however, consider that any blame attached to Comte and Simond, and their names are still retained on the Register.

Signor Poggi killed by a falling stone (1893).—On August 27, 1893, Signor Poggi was descending the Aiguille Noire de Péteret, with David Proment and one of the Fenoillets of Courmayeur; and, when about two hours down, a stone fell near them and struck some loose stones, which were projected amongst the climbers. Proment was hurt and had his axe broken. Signor Poggi was hit behind the ear and killed on the spot.[1]

Signor Cumani, an artist, attempted to ascend Mont Blanc alone, by way of the Brenva Glacier, in September, 1893. He has not been heard of since! *Alpine Journal*, vol. xvii, p. 43.

Dr. Robert Schnürdreher, of Prague, **Michel Savoie** (guide), and **Laurent Bron** (porter), of Courmayeur, were found close together *in a crevasse*, **in August, 1895**, all dead, but not much mutilated. It appears that they ascended Mont Blanc on August 17, descended the same evening to the Refuge Vallot, and on the next morning returned towards Chamonix. Their absence was not remarked for some days, but when search was made they were speedily discovered, about 80 feet down in a large crevasse, opposite to the Grands Mulets, and a little distance below the ordinary track. Frédéric Payot, who was with the search party, said that, in consequence of the long continuance of fine weather, all the slopes of Mont Blanc were more iced than usual, at the time this accident occurred; and that he thought it was probable they had commenced a glissade, had lost command of their movements, and had simply fallen headlong into the crevasse. The position of the crevasse in which they were found is indicated by an asterisk on the view of Mont Blanc from the Brevent.

Emile Rey, of Courmayeur, **lost his life on the Aiguille du Géant, whilst descending, on August 24, 1895.** The following account is based chiefly upon a description furnished to the Syndic of Courmayeur by Mr. Roberts, the only witness of the catastrophe.

Mr. A. C. Roberts, an English climber, engaged Rey for a few days, and on August 23 the two climbed together the lower peak of the Aiguille du Dru, sleeping that evening at the Couvercle. They started next morning at 4.40 and reached the summit of the Aig. du Géant at 2 p.m. Commencing the descent at 3.20 the base of the final peak was reached at 4.5. Shortly after this, the weather looking bad, Rey said that they would move more quickly if unroped. They accordingly coiled up the rope and proceeded on the descent,

[1] Many casualties of a more or less serious nature have occurred in the Alps from falling stones; but this is believed to be the first instance of anyone being killed outright, on the spot.

Nettleship was in good spirits, assisted in digging the hole, and even sang during the night. They had sufficient food and wine, but no extra clothing.

"The storm continued the whole of the night. On the morning of the 25th it was still snowing hard, and all tracks were obliterated. The guides advised Mr. Nettleship to remain where he was, on the chance of a change of weather, but Mr. Nettleship urged that it was idle to remain there and die like cowards, and that they must make an effort to get away. He therefore started, the guides following him. They proceeded some little distance, when Mr. Nettleship stumbled and became unsteady. The guides offered him wine and brandy, which he refused. He then cried out and fell forward.

MR. NETTLESHIP'S GRAVE.

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Dr. Robert Schnürdreher, of Prague, **Michel Savoie** (guide), and **Laurent Bron** (porter), of Courmayeur, were found close together *in a crevasse*, **in August, 1895,** all dead, but not much mutilated. It appears that they ascended Mont Blanc on August 17, descended the same evening to the Refuge Vallot, and on the next morning returned towards Chamonix. Their absence was not remarked for some days, but when search was made they were speedily discovered, about 80 feet down in a large crevasse, opposite to the Grands Mulets, and a little distance below the ordinary track. Frédéric Payot, who was with the search party, said that, in consequence of the long continuance of fine weather, all the slopes of Mont Blanc were more iced than usual, at the time this accident occurred; and that he thought it was probable they had commenced a glissade, had lost command of their movements, and had simply fallen headlong into the crevasse. The position of the crevasse in which they were found is indicated by an asterisk on the view of Mont Blanc from the Brevent.

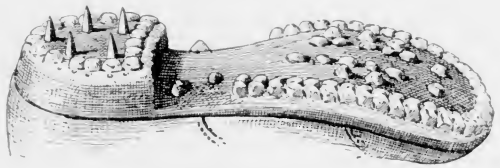
Emile Rey, of Courmayeur, **lost his life on the Aiguille du Géant, whilst descending, on August 24, 1895.** The following account is based chiefly upon a description furnished to the Syndic of Courmayeur by Mr. Roberts, the only witness of the catastrophe.

Mr. A. C. Roberts, an English climber, engaged Rey for a few days, and on August 23 the two climbed together the lower peak of the Aiguille du Dru, sleeping that evening at the Couvercle. They started next morning at 4.40 and reached the summit of the Aig. du Géant at 2 p.m. Commencing the descent at 3.20 the base of the final peak was reached at 4.5. Shortly after this, the weather looking bad, Rey said that they would move more quickly if unroped. They accordingly coiled up the rope and proceeded on the descent,

[1] Many casualties of a more or less serious nature have occurred in the Alps from falling stones; but this is believed to be the first instance of anyone being killed outright, on the spot.

Rey leading, carrying a light sack and the rope. About 4.30 they reached the top of the rocks which descend to the lower snow-fields. The climbing here is easy, but involves the descent of one or two chimneys, at the top of one of which Mr. Roberts waited whilst Rey went down, face outwards. Close to the foot of this chimney Rey jumped, or dropped, on to a small shelf of wet rock, sloping slightly outwards, and covered with small pebbles. He slipped, and for a short distance slid over snow-covered ice. He tried to dig his axe in, but it slipped from his grasp, and he was precipitated in three bounds on to the snow some 600 feet below and to the N. of the route to the hut. Mr. Roberts could see the body lying motionless on the snow. He attempted to reach it both by the rocks and by the snow which skirts them, but succeeded only in getting within about 200 feet. He shouted repeatedly, but got no answer. Snow fell heavily, and a thick fog made it impossible to persevere in the attempt, so, at 6 p.m., he turned away, and, by aid of map and compass, reached the Col du Géant hut at 7 o'clock. Here he found two Swiss climbers without guides, and shortly afterwards a large party of Dutch gentlemen and ladies arrived from the French side with six guides and porters. Snow fell throughout the night, and all in the hut agreed that nothing could be done before the morning. News of the disaster was carried by the Dutch party to Courmayeur, whence a caravan of guides and porters started at once to recover the body, which they carried to Courmayeur on the following day, August 26. It is a satisfaction to know that death must have been instantaneous, as fatal injuries to both skull and spine were found. The funeral took place on the 27th, when a great procession, consisting of the Syndic and other local authorities, mourners, guides, villagers, and tourists, followed the flower-covered coffin from the hamlet of La Saxe to the parish church, and thence to its resting-place in the cemetery at Courmayeur.—*Alpine Journal*, vol. xvii, pp. 561-2.

The news of the death of Emile Rey came as a great and painful surprise upon all who knew him. He combined skill, courage, and dexterity. When the most capable guides have been asked in late years who they, amongst themselves, reckoned the best mountaineers of the time, the name of Emile Rey was always included in their selections. One can only conclude that even the best mountaineers are not infallible.



EMILE REY'S BOOT (1894).

DR. J. JANSSEN.

CHAPTER VII.

THE OBSERVATORIES UPON MONT BLANC.

CAMPING ON THE SUMMIT—UNHAPPY EXPERIENCES OF DR. TYNDALL—A CUP OF TEA PRODUCES A DISASTROUS EFFECT—HARD TERMS IMPOSED ON MONS. VALLOT—ERECTION OF THE VALLOT OBSERVATORY—DR. JANSSEN'S PROJECT—EIFFEL, OF TOWER FAME, CONSULTED—DRIVING A TUNNEL UNDER THE SUMMIT—STRIKE OF THE WORKMEN—DISCOVERY OF A PRUNE-STONE!—'*TOURMENTES*' IMPEDE THE WORK—M. ROTHE AND HIS GUIDE KILLED BY AN AVALANCHE—SUDDEN DEATH OF DR. JACOTTET—NO ROCK IS FOUND, AND DR. JANSSEN DETERMINES TO BUILD ON SNOW—THE '*EDICULE*'—CONSTRUCTION OF THE OBSERVATORY—WINTER TEMPERATURES—THE HEIGHT OF MONT BLANC.

THE establishment of two Observatories on Mont Blanc, one between the Dôme du Goûter and the Bosses du Dromadaire at the height of 14,320 feet, and the other upon the Summit, cannot be overlooked in the history of the mountain. The former of these enterprizes is due to a Parisian, Monsieur J. Vallot, and the latter to Dr. Janssen, Director of the Observatory at Meudon. M. Vallot is a mountain enthusiast, and in 1887 performed the unprecedented feat of camping

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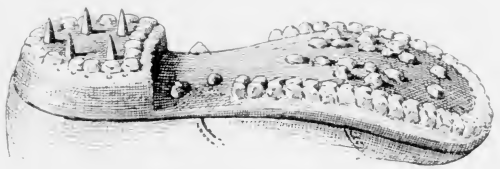

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under canvas on the summit for three days and nights. Until he did so, only one person had encamped there before, namely Dr. John Tyndall, in 1859; and his experiences were particularly unhappy. Both he and the whole of his guides were incapacitated by mountain-sickness, and they came down the next morning in a forlorn state.[1] This occasion is well remembered at Chamonix, and M. Vallot found difficulty in persuading anyone to go with him. When they at last started he was accompanied by M. Richard and a caravan of guides and porters—in all, nineteen persons. So far as the commencement of the ridge of the Bosses du Dromadaire (that is, to about the height of 14,000 feet) they got along all right; but then M. Richard, who was not accustomed to mountain-walking, began to flounder. A little higher up one of the porters became incapable, and by the time the summit was reached M. Vallot himself was seized with vomiting and was obliged to lie down on the snow, exhausted. The porters, after having deposited their loads on the summit, were sent back to Chamonix, while MM. Vallot and Richard, with two guides, remained on the top during three days occupied in meteorological and other observations. Their experiences, which were detailed at length in the *Annuaire* of the French Alpine Club, were very curious. They found themselves entirely without appetite, and unable to eat. Even a cup of tea "produced a disastrous effect." On the third night, one of the guides went out of the tent for a moment, and returned in a great state of alarm, saying that the air was full of electricity. Vallot went out to see, and says that from the tent, from the erection sheltering the instruments, and from himself, "a harsh rustling proceeded, caused by thousands of sparks. My hairs stood on end, and each individual one seemed to be drawn away from me separately. The sparks were felt all over the body; one couldn't remain outside without suffering; we were literally bathed in electricity."

The foundation of the Vallot Observatory was a result of this journey. At first, M. Vallot thought of having a cavern excavated in some of the highest rocks; but he abandoned this idea, and decided to put up a wooden châlet a little below the lower of the two snowy humps which are called the Bosses du Dromadaire, at the height of 14,320 feet above the sea. Difficulties arose at the outset, for the Commune of Chamonix lays claim to the French side of Mont Blanc, and no buildings can be erected without consent. Permission was ultimately granted on rather harsh conditions. The Chamoniards appre-

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THE REFUGE VALLOT.

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The materials of the building were ready at Chamonix by the beginning of June, 1890, and then the more serious task had to be undertaken of their transportation to the height of 14,300 feet, for the larger part of the way over snow or ice, on men's backs. One hundred and ten of the guides and porters had agreed to carry a load apiece up to the selected spot; but when all was ready the weather went to the bad, and rendered a start impossible; and when it improved the guides became occupied in conducting tourists. Still, by the end of July, the building was erected on the position which had been chosen for it, on solid rock. At first it was a very small affair, measuring about 16 × 12 feet, and 10 feet high, a portion of which was 'observatory' and the rest 'refuge'; but it has grown to

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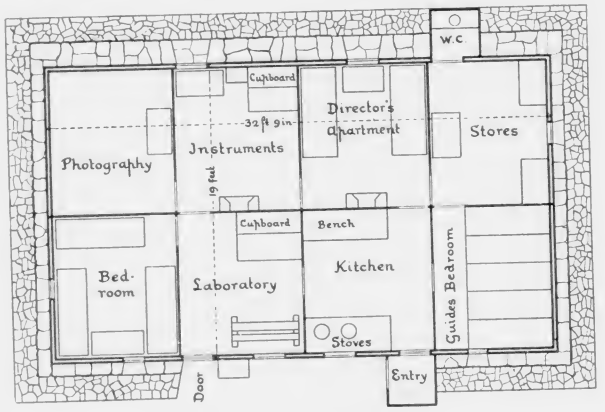

PLAN OF THE VALLOT OBSERVATORY.

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Dr. J. Janssen, the present President of the French Academy of Sciences, and Director of the Observatory at Meudon near Paris, visited the Vallot Observatory a few weeks after it was put up, to carry on spectroscopic observations. He was detained there several days by violent storms, but he ultimately ascended to the summit of Mont Blanc, and got back to Chamonix in safety. The journey occupied him from August 17 to August 23. He was struck with the advantages to science which might be expected from working in a pure atmosphere, and on his return to Paris communicated an account of his journey to the Academy of Sciences, at the meeting on September 22, 1890. He concluded by saying, "I think it will be of the first importance for astronomy, for physics, and for meteorology that an observatory should be erected on the summit, or at least quite close to the summit, of Mont Blanc. I know that objections will be brought forward as to the difficulty of erecting such a building

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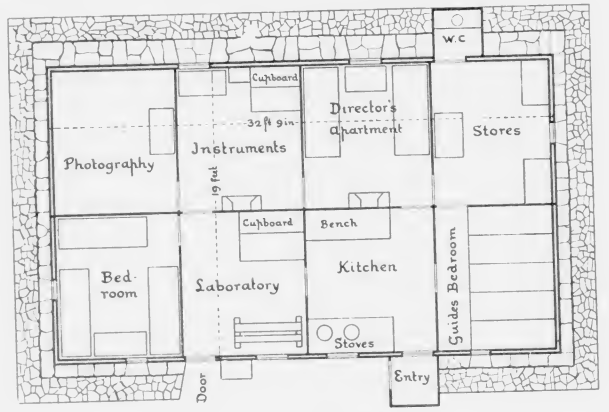

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upon so high a spot, which one can only reach with much trouble, and which is often visited by tempests. These difficulties are real, but they are not insurmountable. I cannot enter deeply into the matter now, and content myself with saying that with the means our engineers can put at our disposal, and with such mountaineers as we possess at Chamonix and in the neighbouring valleys, the problem will be solved whenever we wish." From that time until now Dr. Janssen has been more or less occupied in solving the problem.

In a very short time the necessary funds were subscribed by some of his wealthy and influential friends. Amongst his supporters were Prince Roland Bonaparte, M. Bischoffheim and Baron Adolphe de Rothschild, M. Léon Say and the late President of the Republic. The execution of the project was a work of much greater difficulty. There is no visible rock at the immediate top, and it was proposed to build upon the *snow*. This idea was received with almost universal incredulity. The general opinion was distinctly unfavourable. "The persons," said Dr. Janssen, "who were best acquainted with the glaciers of this great mountain considered that it was quite impossible to establish a building on the summit, such as would serve for observation and residence. They said, and with apparently much force, that the thickness of the snowy crust would prevent foundations being obtained in solid rock, and they would not admit the possibility of establishing the building on snow." Mons. Eiffel, of Tower fame, was taken into consultation, and declared himself ready to construct an observatory on the very top of Mont Blanc, if a rock foundation could be found not more than fifty feet below the surface of the snow, and expressed his willingness to bear the cost of the preliminary operations. It so happens that rocks peep through the snow on three different sides of the summit, no great distance below it—small patches, scarcely visible from below. One, called la Tournette, is about one inch and a half to the *right* of the summit in the folding engraving of Mont Blanc from the Brevent. Another, named les Petits Mulets, is about half an inch *below* the summit in the same illustration. The third, called la Tourette, is on the opposite side of the mountain, and cannot be seen. These rocks which peep through the snow are either summits of Aiguilles, or points on ridges of Aiguilles. But it is exceedingly unlikely that the *highest* points of the Aiguilles are exposed. They are, in all probability, somewhere underneath the summit-ridge, which appears to be placed at the junction of three or more rocky ridges; and as the little patches of rock which do appear on the three sides are only 456 feet (la Tournette), 394 feet (Petits Mulets), and 171 feet (la Tourette) below the extreme top of Mont Blanc, there was at least a possibility that rock might be struck.

M. Eiffel committed the direction of this affair on the spot to M. X. Imfeld, a Swiss, who is well known as a surveyor. A more competent man for the purpose could scarcely have been found. Imfeld had a horizontal gallery driven into the snow, forty-nine feet below the summit, on the French side (the side represented in the engraving of Mont Blanc from the Brevent), and employed as director of the

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M. Eiffel committed the direction of this affair on the spot to M. X. Imfeld, a Swiss, who is well known as a surveyor. A more competent man for the purpose could scarcely have been found. Imfeld had a horizontal gallery driven into the snow, forty-nine feet below the summit, on the French side (the side represented in the engraving of Mont Blanc from the Brevent), and employed as director of the

workmen Frédéric Payot, who is one of the most able and experienced of the Chamonix guides, and has ascended the mountain more than a hundred times. The report rendered by Imfeld to M. Eiffel gives a lively idea of the difficulties of the undertaking. "A wooden hut," he says, "which could be taken to pieces, and transported easily, was made at Chamonix, to form the entrance to the tunnel, and was intended to serve as protection to the workmen. It was divided up into loads, numbered and weighed. From the 10th to the 15th of August was occupied in arranging its transport up to the Vallot Observatory," which place was made the base of operations.

August 13, 1891.—A first *caravane* started with part of the hut and provisions for the Rochers des Bosses.

August 14.—I went with Fréd. Payot and the rest of the porters as far as the Grands Mulets.

August 15.—We reached the Vallot Observatory at 9 a.m., and the summit at mid-day. I settled the position for the mouth of the tunnel, the direction of its axis; and with six workmen arranged the clearing away of the snow, to place the hut.

August 16.—On account of a '*tourmente*' of snow, no one could leave the Observatory.

August 17.—The work done on the 15th of August was partly buried under the snow. It was restored by six workmen, and the tunnel was commenced. Advanced 5 mètres. In the evening, one of the workmen (Jos. Simond) came back ill from the summit. He had a frost-bitten foot, and several toes were without sensibility when pricked with needles. Our doctor, Dr. Egli, of Zurich, gave him the necessary care. Fearing consequences, he wouldn't entertain my suggestion that the man should be sent down to Chamonix.

August 18.—The workmen, discouraged by the illness of their comrade, and by want of space and coverings in the Vallot cabane, and bored by numerous visits of tourists, demanded a rise in their daily wages from 16 to 30 francs. After a long discussion, I offered 20 francs, conditionally on confirmation. One man stuck to his demand and was dismissed. The others remained and continued work in the tunnel. Advanced 5 mètres. At the distance of 16 mètres from the stake (at the mouth), a prune-stone was found.

August 19.—Very high wind. All the workmen went down to the Grands Mulets, to fetch portions of the hut which had been left behind by the contractors, and for wood to burn, and provisions.

August 20.—The workmen were driven back on the Grande Bosse by a very strong north wind, and could not reach the tunnel.

August 21.—Very great '*tourmente*' of snow. Impossible to get to the summit. The porters don't come up. Five workmen decide to go down to the Grands Mulets, to get food. Along with them went a tourist (M. Rothe) with his guide, and tie on to the rope of the workmen. Upon the Petit Plateau, an ice-avalanche fell from the top of the Dôme du Goûter on to the party, and killed the tourist and his guide. My workmen escaped with slight bruises, and went on the same evening to Chamonix.

August 22.—Violent storm. Could not leave the Observatory. The porters don't come up.

August 23.—Snow falling. At 2 p.m. arrival of Fréd. Payot and five porters, laden with food and wood. They bring the first news about the accident on the 21st, and the information that the workmen are discontented, and have gone down to Chamonix, and won't come up again. As the porters who had arrived were not engaged as workmen, I directed Fréd. Payot to go down to Chamonix to procure fresh workmen. He left the observatory, accompanied by Dr. Egli and a porter, but they came back in half an hour on account of the violence of the '*tourmente*.'

August 24.—Much new snow. Wind cold. In the afternoon I decided to try to get to Chamonix, along with Dr. Egli, Payot, and a porter. Got the same evening to the Grands Mulets.

August 25.—Arrived at Chamonix at 10 a.m. In the course of the day engaged six workmen.

August 26.—The workmen went up with Fréd. Payot to the Grands Mulets.

August 27.—Fréd. Payot and the workmen, carrying provisions, went from the Grands Mulets to the Rocher des Bosses.

August 28.—Bad weather. The workmen couldn't get to the summit. I start in the afternoon with Dr. Jacottet, of Chamonix, who wished to make an ascent of Mont Blanc, on which he had failed twice, and he offered to give his services gratuitously, in case of need, during the time he remained at the Vallot cabane.

August 29.—The workmen reached the summit. Advanced 5·3 mètres. One man was sent down to Chamonix ill from mountain-sickness, and another came back with a slightly frost-bitten foot.

August 30.—Fréd. Payot and four workmen continue the tunnel. Advance 5·4 mètres.

August 31.—Snow-storm. The summit is impracticable.

September 1.—Fine weather. Along with Dr. Jacottet, at 9 a.m. we were on the summit. Photographed the panorama. Probed the rock of la Tourette, and also the Petits Mulets, and Rochers Rouges. Advance 1·8 mètres. One workman (Jules Simond) had his fingers frost-bitten.

September 2.—Early in day it was found that Jos. Simond, Jules Simond, and Jos. Charlet were unable to work (from frost-bitten fingers and feet, and mountain-sickness). They were sent down to Chamonix.

Dr. Jacottet unwell (inflammation of the lungs and brain), and I remained at the Observatory to look after him, while Fréd. Payot and all the rest went to the summit, to fix up the hut at the entrance to the tunnel. About 4 p.m. the condition of Dr. Jacottet got worse (delirium). At 5.30 p.m. he lost consciousness, and he died in the course of the night, at 2.30 a.m.

September 3.—Conveyal of the corpse of Dr. Jacottet to Chamonix. Consultation with M. Janssen upon the information obtained by probing (sounding), and continuation of the same.

September 4.—By telegram to-day, you announce your intention of suspending the work.

September 4-8.—Examination of accounts, paying off guides, porters, workmen, etc.

The net result was that a gallery 96 feet long was driven, and in the whole course nothing more rocky was found than a prune-stone! M. Eiffel retired from the undertaking, but Dr. Janssen had the gallery carried on by Payot 75 feet farther, at an angle of forty-five degrees to its former course, still without finding rock, and he then decided to erect his observatory on *snow*, and on the highest point of the summit-ridge.

Two important questions, he admitted, required first of all to be elucidated. One was, Will the observatory, if placed on the summit snow, sink or swim? The other was, What movements are there to dread in this snowy cap? To obtain an answer to the first question an experiment was carried out at Meudon. A column of lead weighing 792 lbs., but only one foot in diameter, was placed on piled-up snow, brought to the density of that at the summit. The lead is said to have sunk in less than an inch, and Dr. Janssen considered this result encouraging. "As to the question of the movements," he said, "it was studied and determined by the installation in 1891 of a wooden edifice, which has now been two years on the spot." This

edifice, which they term "the *edicule*," has now been in position for five years, but I do not feel that it has yet settled the 'question.' The little building is about six feet high from floor to roof, and a post at each corner is carried down six feet more. To install it, in 1891, a hole was dug; the level of the floor was made to coincide with the level of the summit, and the snow was then filled in again. Its appearance then was that of FIG. 1 in the annexed diagram. In

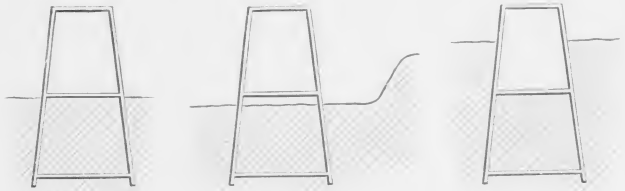

FIG. 1 (1891). FIG. 2 (1892). FIG. 3 (1893).

1892 it was noticed that the floor was beneath the general level of the summit, and that on one side the snow rose in a sort of bank to nearly half the height of the hut (see FIG. 2). On August 8, 1893, I visited it, and found that only 2 ft. 3 in. rose above the summit of Mont Blanc (see FIG. 3). In July, 1894, I visited it again, and found it in much the same condition; but the snow had been recently trampled down, and, I imagine, a good deal had been cleared away. The level of the gallery is already more than 49 feet below the summit, and this is a significant fact, affording a practical demonstration that the snows at the top of Mont Blanc are constantly descending to feed and maintain the glaciers below. The summit in 1891 was not the summit in 1892, nor will that of 1895 be the summit of 1896. The height of the mountain, nevertheless, remains nearly constant by the accession of fresh snow. It is not the liability of sinking *into* the snow, but the strong probability that any building erected on the top will sink *with* the snow, which gives rise to apprehension about the stability and maintenance of Dr. Janssen's Observatory.

He is not, however, dismayed by this prospect, and has constantly pressed forward the building to completion. In the winter of 1891-92 the Observatory (partly of iron and partly of wood) was constructed at Meudon, was taken to pieces and forwarded to Chamonix, and in the course of the latter year was transported up the mountain, under the management of Frédéric Payot. By the end of the season about one quarter of the materials had been advanced to a little patch of rocks (the Petits Rochers Rouges) 750 feet below the summit, and the rest so far as the Grands Mulets. There they remained for the winter. The early part of 1893 was occupied in recovering the depôt at the Petits Rochers Rouges, which was buried under 25 feet of snow, and in bringing up the remainder of the materials. By the end of

1893, the building was erected on the summit, its heavier portions having been hauled up the terminal slope of snow, called the Calotte, by means of little windlasses, such as Payot is holding in the accompanying engraving. The building, however, was not completed until

FRÉDÉRIC PAYOT AT THE ROCHERS ROUGES.

the end of 1894. When I visited it in July of that year it was more than half filled with snow, and two days of hard work were employed before it became tenantable. At that time no instruments had been sent up.

Dr. Janssen has shown an energy, courage, and tenacity in the prosecution of his undertaking which would be remarkable in anyone, and are doubly so in a man of threescore and ten, who is unable to climb a yard, and who is so badly lame as to walk with difficulty even on level ground. Three times already he has had himself dragged to the summit in sledge. On the second occasion the strength of his men was economised on steep places by using the windlasses which had already been employed to haul the materials.

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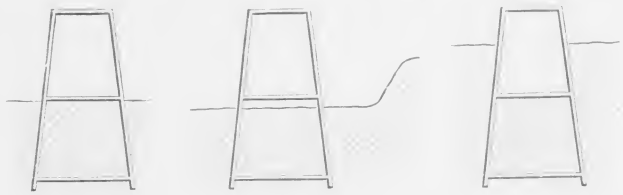

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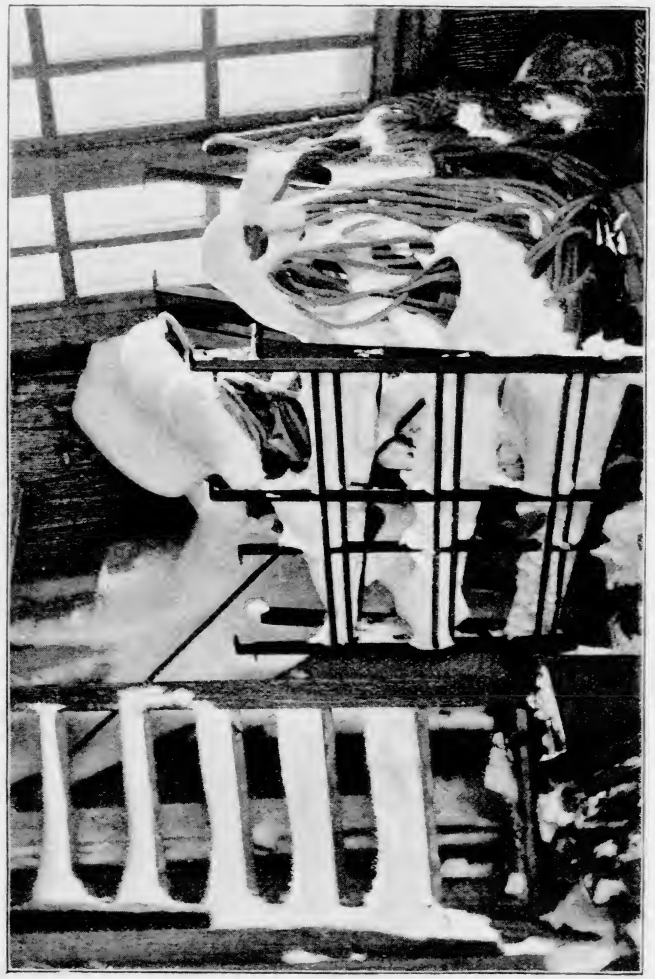
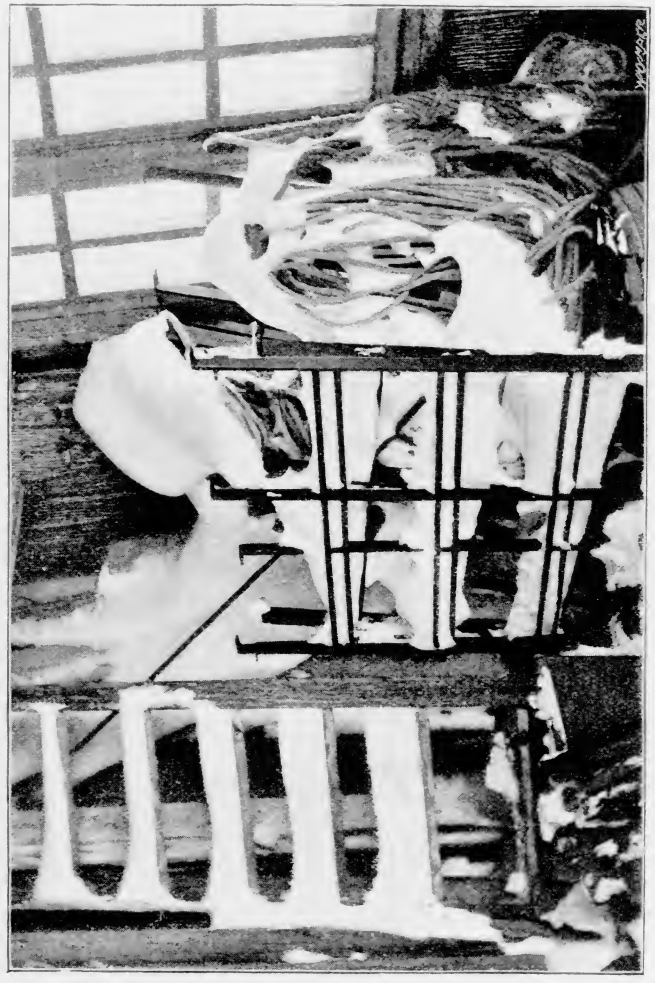


INTERIOR OF DR. JANSSEN'S OBSERVATORY ON THE SUMMIT OF MONT BLANC, JULY 26, 1894.

The time has now arrived for the installation of the instruments. The principal one that is destined for the Observatory is termed a *Météorographe*, and has been constructed by Richard of Paris, at a cost of £750. It registers barometric pressure, maximum and minimum temperatures, the direction and force of the wind, etc., etc. It is put in movement by a weight of 200 lbs., which descends about 20 feet and is calculated to keep everything going for eight months—the

DR. JANSSEN'S OBSERVATORY

length of time during which it is contemplated it may sometimes be left to itself. In introducing his huge instrument to the Academy of Sciences on August 13, 1894, Dr. Janssen said, "I do not conceal from myself that, notwithstanding the minute precautions which have been taken, there must be some degree of uncertainty about the result." One possibility need only be mentioned. The barometer that will be employed will be a mercurial one of the Gay-Lussac pattern. Until now, the minimum temperature that occurs on the summit of Mont Blanc during winter has been unknown. In the winter of 1894-5, however, thermometers were placed in the interior and on the exterior of the Observatory, and it was found that the former registered $-35°{\cdot}2$



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Centigrade and the latter − 43° C., as the greatest degrees of cold. These temperatures are respectively equal to − 31°·36 and − 45°·4 Fahr. The former (the inside temperature) is dangerously near to the freezing-point of mercury (− 40° F.), and if temperature in the interior of the Observatory should on some future occasion fall a little lower the barometer will cease to act just at a time when it would be particularly interesting to have it in operation. The installation of this instrument was amongst the most important pieces of work which were undertaken at the Mont Blanc Observatory in 1895, but it was not in thorough working order at the end of the season.

Amongst the many things which one may expect to see accomplished, sooner or later, by means of Dr. Janssen's Observatory, will be the more accurate determination of the height of Mont Blanc; though, from the close accordance between the most authoritative of recent determinations,[1] it does not seem likely that a fresh one will necessitate any material alteration in the accepted altitude.

The first careful measurement[2] of Mont Blanc was made by Sir George Shuckburgh, Bart., in 1775.[3] From eighteen observations of mercurial barometer he found that the level of the Lake of Geneva was 1228 feet above the sea; and, by triangulation, that the *apparent*[4] summit of Mont Blanc was 14,432 feet above the Lake of Geneva, or 15,660 feet above the sea. The next measurement was made by De Saussure, in 1787, by means of the mercurial barometer, which he observed during his four and a half hours' stay on the summit. He calculated his observations in several different ways, and his ultimate determination from the mean of his means was that the summit of Mont Blanc was elevated 15,667 feet (2450 toises) above the level of the sea. These two determinations closely approximate to the elevation which is adopted for Mont Blanc upon the current Official Maps of France, Switzerland, and Italy.

[1] See the Table of Heights in the Appendix.

[2] Earlier measurements were very wide of the truth. Peter Martel thought he measured the height of Mont Blanc. He says (at p. 28), "we found . . . the height of the highest mountain" was 2076 toises above the Lake of Geneva. This would make the height of 'the highest mountain' 14,503 English feet above *the sea*. From a mistake in his identification of Mont Blanc in Plate 3 at the end of his pamphlet, I think it likely that Martel was deceived in supposing that he measured Mont Blanc.

[3] See the *Philosophical Transactions of the Royal Society of London*, vol. lxvii, part ii, pp. 513-597.

[4] I say 'apparent summit' for this reason. The ridge at the summit of Mont Blanc, though nearly level, is slightly higher at its eastern than at its western end; and it is possible that Sir George Shuckburgh did not see (or did not identify) the very highest point from the Salève and the Môle, his places of observation. This may partly account for his determination being slightly beneath the reality. Further, it is possible that the elevation of Mont Blanc may have slightly increased since his time, though it does not appear to have changed sensibly in the course of the last half-century.

Some of Sir George Shuckburgh's other determinations come very close to the heights now accepted.

	Sir G. Shuckburgh.	Etat Major Français.
Bonneville . .	1475 feet	1476 feet
Chamonix . .	3305 ,,	3445 ,,
The Montanvert .	6231 ,,	6303 ,,
Summit of the Môle	6113 ,,	6132 ,,
do. Buet .	10,124 ,,	10,200 ,,

CHAPTER VIII.

HOW TO GET TO CHAMONIX.

ROUTE TO TAKE—HOW TO PRONOUNCE CHAMONIX—TIMES, DISTANCES, AND FARES—PARIS TO CLUSES—GENEVA—ROAD FROM GENEVA TO CHAMONIX—ANNEMASSE—BONNEVILLE—THE MÔLE—CLUSES—SALLANCHES—LE FAYET—CHÂTELARD—LES MONTÉES—CHAMONIX.

It may be taken for granted that everyone who wishes to get to Chamonix will want to go by the most direct way, and as quickly as possible. The most direct and the quickest way is through Paris, and by the Paris, Lyons and Mediterranean Railway, *viâ* Macon, Culoz, Bellegarde, Annemasse, and la Roche to Cluses. But, before starting for the place, a word ought to be said about the spelling and pronunciation of its name.

In the course of reading I have found the following ways of spelling the name:—

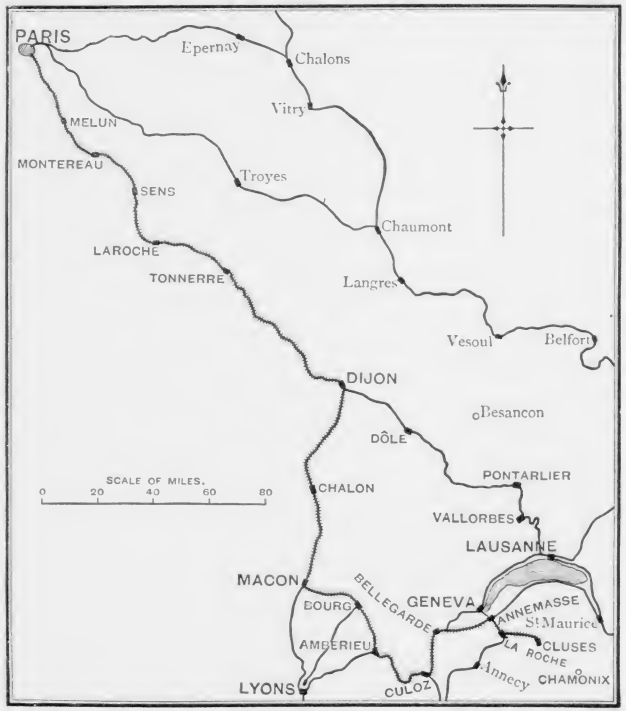
Chamounix.	Chammonis.	Chamougny.	Chamounis.
Chamouny.	Chamunix.	Chamoigny.	Chammuny.
Chamouni.	Chamony.	Chamonis.	Chamunis.

I reject the whole of them and adopt Chamonix, because this appears to be the correct form. It is almost the only form I have found, when searching the Archives, in documents dating back for several centuries.[1] I am told by M. le Maire that it is the only form he can recognize; and it is employed upon the Official Maps of France, Switzerland and Italy. In regard to pronunciation I am less clear. The second syllable is neither *moon* nor *moan*, but something between the two; and, after having made many Chamoniards pronounce the name hundreds of times, it appears to me that *Sham-moon-nee* is about the closest one can get to it, in phonetic English. Upon no account pronounce the x.[2]

[1] A large proportion of the names of villages, mountains, etc., in the Mont Blanc district are spelt in two or more ways; and, besides difficulties which may be experienced on this account, the tourist will perhaps feel others arising from the duplication of names, or from closely similar names. There are, for example, two Têtes Noire,—one is a carriage-road leading from Chamonix to Trient, and the other is a mountain between Servoz and St. Gervais. A portion of the road from Chamonix to Sallanches is called les Montées, and a little above the village of Argentière there is a Col des Montets. There are two places, each only a few miles from Chamonix, called Châtelard; two Cols called Col de la Forclaz; and two eminences called l'Aiguillette. In the basin of the Mer de Glace there are two pinnacles called le Capucin. There is an Italian and a Swiss Val Ferret, and an Italian and a French Glacier de Miage. There are mountains called the Darreï and the Darrey, the Chatelet and the Châtelet. The valley of Chamonix has its Aiguilles Rouges, and the Italian Val Ferret, and the Val Vény have a Mont Rouge apiece.

[2] "La lettre x qui termine le mot, ne paraît avoir d'autre valeur que celle d'une orthographe ou d'un accent local, comme dans Fernex, Gex, Bex, pour Ferney, etc., et la lettre z dans le Forclaz, les Praz, Servoz, etc." Durier's *Mont Blanc*, chap. iii.

Leaving London by one of the morning expresses which arrive at Paris in the afternoon, there is sufficient time to dine comfortably before leaving by the evening express for Cluses, which is the best train to take, during the season. This train is in the Gare de Lyon well before the hour for starting, and places can be secured. The correct course is to select and secure a place *in good time*, and then to dine leisurely at the Buffet, *on the side of the platform*.



PARIS TO CLUSES.

Before the opening of the railway between Bellegarde and Cluses, the greater part of persons going from Paris to Chamonix used to pass through Geneva; but as the new line *keeps entirely upon French territory*, and by going that way one escapes the vexatious exactions to which one is liable upon entry into Switzerland,[1] many persons

[1] Duties are now levied at some of the Swiss Custom Houses on such articles, and such trifling quantities, as Alpine rope, or 4 ozs. of Liebig's Extract, or even upon 2 ozs. of Black Currant Lozenges!

now *avoid* Geneva. It is to be hoped that the Swiss authorities will discover that their country loses more than it gains by these petty imposts, and will revert to the civilized habit of passing articles which (though, perhaps strictly speaking, liable to duty) are obviously intended for use by the traveller.

The 7.25 p.m. train to Cluses is 1st and 2nd class as far as Bellegarde, and only stops at Laroche, Dijon, Macon, Bourg, Amberieu, and Culoz. After Bellegarde it takes 3rd class, and stops at all stations.

Distance in kilomètres.				Fares. frs. c.	frs. c.	frs. c.
	Paris	(B). dep.	7.25 p.m.			
155	Laroche	(B). arr.	9.45 ,,	17 35	11 70	7 65
		dep.	9.50 ,,			
315	Dijon	(B). arr.	12. 8 a.m.	35 30	23 80	15 50
		dep.	12.13 ,,			
440	Macon	(B). arr.	1.59 ,,	49 30	33 25	21 70
		dep.	2. 2 ,,			
478	Bourg	(B). arr.	2.38 ,,	53 55	36 10	23 55
		dep.	2.39 ,,			
509	Amberieu	(B). arr.	3.10 ,,	57 05	38 45	25 10
		dep.	3.16 ,,			
559	Culoz	(B). arr.	4.10 ,,	62 65	42 25	27 55
		dep.	4.20 ,,			
592	**Bellegarde**	(B). arr.	4.59 ,,	66 30	44 75	29 20
		dep.	5.19 ,,			
605	Valleiry	...	5.38 ,,			
611	Viry	...	5.46 ,,			
616	St. Julien	...	5.54 ,,			
619	Archamps	...	6. 1 ,,			
624	Bossey-Veyrier	...	6.10 ,,			
631	**Annemasse**	(B). arr.	6.23 ,,	70 65	47 70	31 10
		dep.	7.17 ,,			
634	Monnetier	...	7.30 ,,			
640	Regnier	...	7.40 ,,			
643	Pers-Jussy	...	7.47 ,,			
647	**La Roche**	...	arr. 7.53 ,,	72 55	49 00	31 95
			dep. 8. 6 ,,			
654	St. Pierre	...	8.17 ,,			
658	Bonneville	...	8.26 ,,			
665	Marignier	...	8.38 ,,			
669	Le Nanty	...	8.45 ,,			
672	**Cluses**	(B). arr.	8.52 ,,	75 35	50 90	33 15
		dep.	9. 5 ,,			
714·7	**Chamonix**	...	arr. 2.35 p.m.	from Cluses, 8 francs.		

(B) signifies Buffet.

A good dinner before starting ought to enable one to sleep through the night. Awake at **Amberieu** to admire the rising sun and to look at the scenery. Take coffee at **Bellegarde.** Shortly after leaving that place the railway crosses the R. Rhone, and, rising to a considerable height, gives many views over very picturesque country. At **St. Julien** (15 miles from Bellegarde), the line approaches Mont Salève, and for the next 5 or 6 miles skirts the western base of that

mountain. Just before arriving at Annemasse, the R. Arve (coming from Chamonix) is crossed at the Pont d'Etrembières.

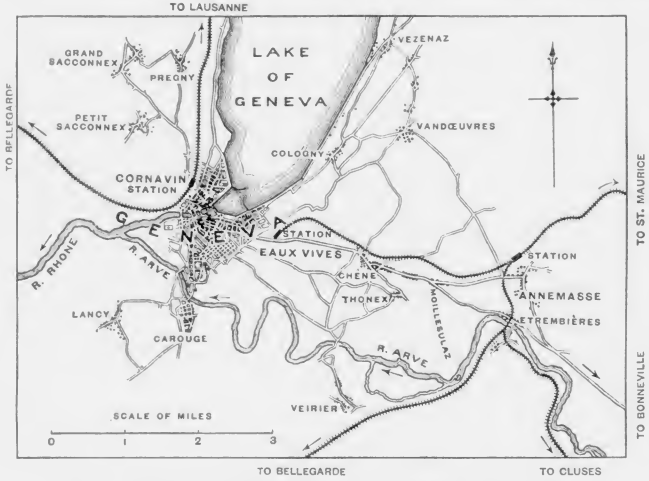
Annemasse (436 mètres), 39 kilomètres from Bellegarde, is a busy junction, with lines radiating to Geneva (Eaux-Vives Stn.), Bouveret and La Roche. **Buffet good,** prices fair. The opportunity to breakfast here will not be overlooked by persons of discretion. Upon leaving Annemasse, the train recrosses the Bridge of Etrembières, and for a few miles the line winds round the *eastern* base of Mont Salève. A succession of charming prospects delight the eye on every hand. At **La Roche** (an unspoiled French village rarely visited by tourists) *take care that you are right for Cluses,* and do not go away to Annecy and Aix-les-Bains. The line divides here. The Cluses branch goes away to the left, and sweeps round to cross the Arve. The Annecy line turns to the right, and makes a great bend to climb the hills. In approaching **Bonneville** the conical mountain called the Môle is seen right in front. The line now crosses to the right bank, and keeps on that side, near the Arve, for the rest of the way. From the next station (**Marignier,** HOTEL DE LA GARE, small, close to the Station) a tramway leads to St. Jeoire, and runs in correspondence with the railway. In a quarter of an hour more you are at **Cluses,** where the Diligences are drawn up in readiness in the Station yard. The trains are generally behindhand, and the Diligences leave punctually, so there is little time for refreshment; which is scarcely to be regretted as the Buffet here is not to be recommended. It is better to lay in at Annemasse something to consume on the road. Before leaving Cluses make sure that your luggage has been put into the Diligence, *and has not been taken out again.* This sometimes happens, and the luggage is left behind. One meets at Cluses the old road from Geneva, and follows it the rest of the way to Chamonix.

Geneva.—(374 mètres). Pop. according to the Census of 1888, 52,829, is considerably more now. In consequence of the transference of traffic through Geneva to the line Bellegarde—Annemasse—Cluses, the *road* from Geneva to Cluses through Bonneville, which used to be a busy one, is now almost deserted. Instead of seeing clouds of dust raised as *milords* rolled past in their chariots, and by the diligences conveying Tom, Dick and Harry, Jules and Jean, one can now look along vistas of a mile or more without perceiving a single individual. Geneva should be visited, either going or returning. The express that left us at Bellegarde arrived at Geneva **(Cornavin Stn.)** at 5.49 a.m. Cornavin is *the* Station, the most important one,[1] at Geneva, and formerly was the *only* one. Now, there is another at **Eaux-Vives,** the Terminus of a short line which runs to Annemasse. See annexed Plan. From Cornavin Stn. one might have walked to Eaux-Vives Stn. (or taken a tram which runs from one to the other) and caught a train at 6.54 a.m. which arrives at Annemasse at 7.9 a.m., and there have passed over to the train in

[1] The line which runs round the northern side of the Lake of Geneva (or right bank as it is termed) has its terminus at Cornavin. From this Station one can go to any part of Switzerland.

which we came from Bellegarde. But as this involves changing carriages at Geneva, and again at Annemasse, it is a more troublesome route than the other, especially for people with baggage.

There are many inducements to visit the old City of Geneva. The superb views of Mont Blanc which may be had from the shores of the Lake, and even in the streets, the beauty of the Lake itself, the admirable quays and pretty gardens, the monuments and public buildings, antiquities and museums, all combine to make it attractive.[1] It is well provided with Hotels. From the Table given on page 84, which



PLAN OF GENEVA, SHEWING THE POSITION OF THE RAILWAY STATIONS.

includes the principal ones, it will be seen that there are hotels to suit all pockets. The largest and finest, the NATIONAL, though beautifully situated, is a considerable distance from both railway stations. Amongst the better and *most central* ones may be mentioned the HOTEL DE LA POSTE (in the middle of the City), the HOTEL SUISSE and HOTEL TERMINUS AND BAUR (both close to Cornavin).

The road from Geneva to Chamonix passes through Chêne, Annemasse, Bonneville, Cluses, Sallanches, and the distances are—

Geneva to Annemasse	8	kilomètres
Annemasse to Bonneville	20	,,
Bonneville to Cluses	14	,,
Cluses to Sallanches	16·7	,,
Sallanches to Chamonix	26	,,
Total	84·7	kilomètres

or about 53 English Miles.

[1] See *Plan de la Ville de Genève et de sa banlieue,* par L. Roget et H. Amend, Genève (Librairie Georg).

HOTELS AT GENEVA.

Name of Hotel.	Address.	Proprietor.	No. of Beds.	Chambre, 1 lit.	Chambre, 2 lits.	Déjeuner complet.	1st Table d'hôte.	2nd Table d'hôte.	Pension.
Grand Hotel National (*r*)	Quai du Leman	D. Gorger, prop.	260	frs. 5—10	frs. 9—20	frs. 1.50	frs. 3.50	frs. 5	frs. from 12
Hotel des Bergues (*r*)	Quai des Bergues	Ch. Wraehter, prop.	180	4—9	7—20	1.50	3.50	5	,, 10
Hotel de la Poste (*l*)	Place de Hollande	C. Stäler, prop.	140	2.50—4	5—8	1.50	3.50 *r*	3 *r*	7—10
Hotel de l'Écu (*l*)	Place du Rhône	Haake Bros., props.	120	from 3.50	from 7	1.50	3.50	4.50	from 9
Grand Hotel Beau Rivage (*r*)	Quai des Paquis	Mayer & Kunz, props.	150	,, 4.50	,, 9	1.50	...	...	...
Hotel du Lac (*l*)	Place du Port	H. Spuhlinger, prop.	122	,, 3.50	,, 7	1.50	3.50 *r*	4.50 *r*	...
Hotel de Russie (*r*)	Quai du Mont Blanc	Vve. A. Rathgeb, prop.	100	,, 4	,, 8	1.50	3	5	...
Hotel de Paris (*l*)	Grand Quai	J. Steinlé, prop.	50	...	...	...	...	...	...
Hotel de la Paix (*r*)	Quai du Mont Blanc	F. Weber, prop.	180	,, 4	,, 8	1.50	3.50	5	from 10
Hotel Suisse (*r*)	Rue du Mont Blanc	Panzera & Co., props.	130	4—5	8—10	1.50	...	...	10—12
Grand Hotel Metropole (*l*)	Grand Quai	D. Barkard, prop.	180	4—7	8—11	1.50	4	5	9—15
Hotel Terminus and Baur (*r*)	Rue des Alpes	F. Baur, prop.	110	2—4	4—8	1.25	3	3.50	8—12
Hotel d'Angleterre (*r*)	Quai des Paquis	J. Bantlé, prop.	90	3.50—6	7—12	1.50	...	4	8—12
Hotel Victoria	Rue Pierre Fatio	W. Niess, prop.	80	3.50—4.50	7—9	1.50	3	3.50	8—10
Hotel Richemond (*r*)	Place des Alpes	A. Arnleder, prop.	75	from 3	from 6	1.50	3	3.50	from 7
Hotel de Genève (*r*)	Rue du Mont Blanc, 13	J. Zimmer, prop.	70	2—3	4—6	1.25	3.50 *r*	3 *r*	7—8
Hotel de la Monnaie (*r*)	Rue de Lausanne	A. Vernet-Schmid, prop.	40	1.50—3	3—5	1.00	2.50 *r*	2.50 *r*	6.50—10
Hotel de la Balance (*l*)	Rue du Rhône, 2	J. Bruchon, prop.	90	...	...	...	...	...	...
Hotel du Mont Blanc (*l*)	Rue du Rhône, 64	Vve. Gras-Moyriat, prop.	35	...	...	...	...	...	...
Hotel Bristol	Rue du Mont Blanc, 10	J. Curtet, prop.	60	2.50—5	4—10	1.25	3	4	6—9
Hotel du Grand Argle (*l*)	Rue du Rhône, 48	G. Wiesendanger, prop.	45	...	...	...	...	...	...
Hotel de France (*r*)	Rue Pradier	J. Ferreol, prop.	20	...	...	...	...	...	...

Note—In most instances the Pension price is for at least one week. Firing is extra in all cases.

(*l*) Left bank (*rive gauche*) of the Lake. (*r*) Right bank (*rive droite*) of the Lake. *r*. Including Wine at Table d'Hote.

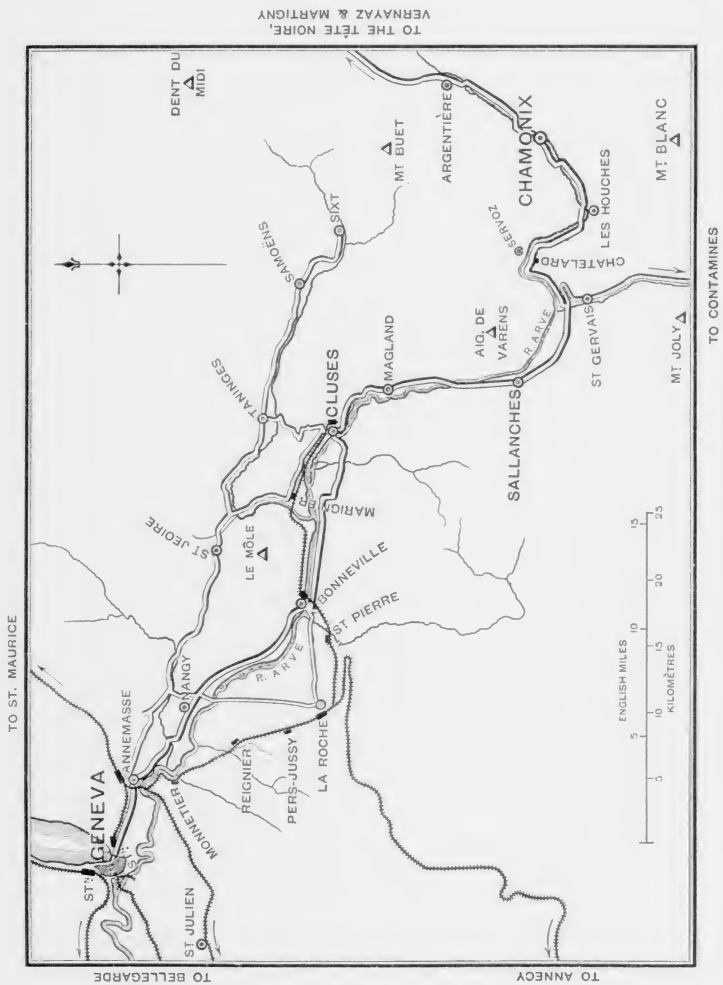
Annemasse (436 mètres) is a large village, on flat ground, a little above the R. Arve. Soon after passing it, there are admirable views of Mont Blanc on the road, which is well kept up, and a good road for pedestrians as well as an excellent one for cyclists.[1] The entire rise from Geneva to Chamonix is only 2217 feet (distributed over 53 miles), a great part of which occurs between le Fayet and les Houches. Four kils. from Annemasse the road crosses the Menoge Torrent by a fine stone bridge of 3 arches, and then turns sharply to the right (south). A pedestrian can save time here by taking an old road which leads away on the left and cuts the curve made by the present route. Three kils. from the bridge one comes to the village of **Nangy** (478 mètres), Hotel de l'Écu de Genève; and in 4½ kils. more passes through **Contamine sur Arve** (458 mètres), where there is a small inn. The road continues close to the Arve all the way to Bonneville, which is 8 kils. farther on.

Bonneville (450 mètres), on the right bank of the Arve, which just below the town is joined by the Borne Torrent (both streams embanked), has 2271 inhabitants, wide streets, and a large *Place*, planted with trees. Hotel de la Balance (on the *Place*), Hotel du Soleil. Numerous good shops. There is a steam tramway from Bonneville to Annemasse, with trains running three times a day each way, corresponding with others at Annemasse for Eaux-Vives. Fare 1 fr. 10 cents. The road to Chamonix crosses the Arve by a stone bridge of 4 arches at the S. end of the town. On the near side of the bridge there is an Obelisk erected in memory of the soldiers of Haute Savoie who fell in the war of 1870-71; and on the opposite side of the bridge there is a lofty stone column in honour of King Charles Felix. Post and telegraph office is against the bridge, and in the same building is the seat of the French Alpine Club, section du Mont Blanc, founded May, 1877.

The summit of **the Môle** (1869 mètres, 6132 feet), to the N.E. of Bonneville, is a renowned *pointe de vue*, which is often ascended to see the Range of Mont Blanc.[2] Being quite isolated, it has an uninterrupted panoramic view all around. It should be noted, however, that the summit of Mont Blanc itself bears S.E. of the Môle, and the sun is too much in front of the spectator *in the morning* to let the mountain be seen to advantage. The afternoon and evening light are far better for it, though the morning is the best time for viewing the rest of the panorama. From Bonneville to the top of the Môle occupies 3 h. 40 min. to 4 hours; the descent can be made in 1 h. 45 min. or less. Guide 10 francs. The path commences at Bonne-

[1] In the little pamphlet entitled *Itinéraires de Courses pour Cyclistes dans les Environs de Genève*, par Ch. Bastard, Genève, 1894, from Geneva to Chamonix and back is included (p. 21) amongst the excursions for one day and a half,—seven and a half hours going, and five hours returning.

[2] The Môle was ascended by W. Windham (1741) and by Peter Martel (1742). The former says, "we fancied that after the *glacieres* every mountain would be easy to us, however it took us more than five Hours hard labour in getting up." The latter appears to have occupied six hours on the ascent. I look upon the Maulè, he said, "to be somewhat higher than *Montanvert*, because we were half an Hour longer in going up it, although the Road is very even, as well as steeper."



ville Church, and leads past les Tours and Aise. At the beginning it goes through woods, but the upper part is unshaded, in places is steep, and sometimes is very hot. About 1000 feet below the summit, on the Bonneville side, there is a châlet (put up in August 1891), with beds, belonging to the Section du Mont Blanc of the French Alpine Club, where tourists can obtain food and lodging at moderate prices, *if the guardian is there.* It occasionally happens that the guardian locks the place up and goes off with the key, and the tourists sit outside and anathematize him. Hence to the top is $\frac{3}{4}$ h. over grass slopes. The view from the summit is very extensive and beautiful. At the foot of the mountain on the north there is the village of St. Jéoire, and eastwards an unimpeded view over Tanninges and Samoens, with the Buet in the background (more than 30 miles away). To the right of the Buet, the range of Mont Blanc can be seen almost from one end to the other; and, down below, Cluses with glimpses of the Valley of the Arve beyond. The country round La Roche and for many miles farther away occupies the southern section of the panorama, and in the west one looks over Geneva and the Lake to the long ridges of the Jura. Though the northern side of the Môle is precipitous, it may be ascended from St. Jéoire in about the same time as from Bonneville. Mules *can* go to the top, but they are seldom taken there.

On leaving Bonneville observe that the road leading straight away from the bridge goes to La Roche, while that for Cluses turns sharply to the left. No part of the range of Mont Blanc can be seen from Bonneville,[1] nor between that town and Cluses. For the first 5 kils. the road is nearly level and perfectly straight. At $6\frac{1}{2}$ kils. from Bonneville it passes through **Vougy**, with the HOTEL DE LA POMME D'OR; and $3\frac{1}{2}$ kils. farther on is the village of **Marnaz**, where there are only *cafés.* Thence to Cluses is little more than 4 kils. On arriving at the main street, turn to the right if you intend to continue on *the road;* and to the left if you want to go to the *railway.*

Cluses, on the Arve (485 mètres), 1915 inhabitants, is at present the terminus of the railway which it is intended in course of time to extend to Chamonix, and thence to Vernayaz (in Switzerland). It is a watchmaking town, with very wide streets, and open spaces. The Watchmaking School is at the northern end. There is a new Hotel (not recommended) outside the town and close to the Station, HOTEL NATIONAL, and the HOTEL REVUZ (in the town). The distance from Cluses to Chamonix is 42·7 kilomètres, and the Diligences usually take $4\frac{3}{4}$ to $5\frac{1}{4}$ hours, that is to say, they travel at an average rate of scarcely more than 5 miles an hour. They stop at Magland,

[1] Baedeker's *Guide* (15th ed. pp. 259-60) in speaking of Bonneville says "to the right we obtain a superb view of Mont Blanc, whose dazzling peaks towering majestically at the head of the valley seem to annihilate the intervening distance of nearly 30 M. The Aiguille du Goûter appears first; then, from right to left, the Dôme du Goûter, Mont Blanc itself, the Mont Maudit, Mont Blanc du Tacul, the Aiguille du Midi, and the Aiguille Verte." Readers of Baedeker are warned that not one of these peaks can be seen from Bonneville, and that they do not 'tower at the head of the valley.' Mont Blanc and its Aiguilles begin to be seen when one is about 1000 feet up the Môle. The passage is perhaps intended to describe the view from the summit.

Sallanches, le Fayet, Châtelard, and les Montées. The intermediate distances are—

Cluses to Magland	6·5	kilomètres
Magland to Sallanches	10·2	,,
Sallanches to le Fayet	6·0	,,
le Fayet to Châtelard	7·5	,,
Châtelard to les Montées	2·0	,,
les Montées to les Houches	3·5	,,
les Houches to les Bossons	4·0	,,
les Bossons to Chamonix	3·0	,,
	42·7	kilomètres

or about 26⅔ English Miles.

The road at first keeps to the right bank of the Arve, and rises very slightly. Five kils. from Sallanches it crosses to the left bank, and Mont Blanc appears soon afterwards, directly in front. In 1 h. 30 min. (by dil.) one comes to

Sallanches (540 mètres), 2064 inhabitants. HOTEL DES MESSAGERIES; HOTEL DU MONT BLANC. From this place, or anywhere in its neighbourhood for several miles round in all directions, one has the finest possible views of Mont Blanc that can be had from a low level. The summit is distant 13½ miles as the crow flies, and it rises 14,000 feet above the spectator. It continues visible during part of the way to le Fayet, but at last the Aiguille de Bionnassay shuts it out, and becomes the dominating feature of the landscape. Notice also the towering Aignille de Varens (8097 feet) to the left, on the northern side of the Arve. In 2 h. 10 min. from Cluses the diligence arrives at the small group of houses called

le Fayet.—HOTEL DU PONT DE BON NANT; HOTEL DE PAIX; HOTEL DES ALPES. This is a stopping-place of the diligences for the Baths and Village of St. Gervais (see chap. xiv, The Tour of Mont Blanc, for Plan). The new (Napoleon III) road, which has superseded the old route to Chamonix *viâ* Servoz, commences at le Fayet, and it is to this place the extension of the railway from Cluses (which is now under construction) is to be carried. The road continues to rise but slightly for two kilomètres beyond le Fayet, but then the gradients increase, and the diligences go at a walking pace for a long distance. A good pedestrian getting down here can arrive at Chamonix on his legs almost as soon as the diligence.

The road, 3 to 4 kils. beyond le Fayet, has risen high above the Arve, and gives a very fine view of the Plain of Sallanches and of the Aiguille de Varens. It then turns sharply to the east, and for a time the Aiguille du Midi makes its appearance in the distance. The near scenery is highly picturesque. At **Châtelard,** HOTEL DU TUNNEL DU CHÂTELARD (pension 6 francs a day, no village), the diligences change horses. This little inn is situated in a very charming position, and is suitable for persons who want an economical holiday. The neighbourhood is well-wooded, and one can go about at pleasure anywhere. (This place must not be confounded with another Châtelard on the route from Chamonix to the Tête Noire.)

The road here passes through a small tunnel, that intersects a Roman gallery, which was found while the tunnel was being made. At the top of the steps leading to the gallery there is this inscription, '*Galerie Romaine, Decouverte en* 1863, *en construisant le souterrain.*'

TUNNEL AND ROMAN GALLERY AT CHÂTELARD.

The part of the gallery that is now visible is only 15 paces long, about 5 ft. 6 ins. high, and 3 ft. 6 ins. wide.[1] The road leading away on the left, after passing through the tunnel, goes to Servoz, which is seen about ¾ mile away (see chap. x.)

In 16 or 17 min. from Châtelard the diligence arrives at **les Montées,** HOTEL DES MONTÉES. The road hereabouts, and indeed almost all the way from le Fayet to les Houches, passes through extremely

[1] The majority of tourists who pass through the tunnel at Châtelard are unaware of the existence of this gallery above.

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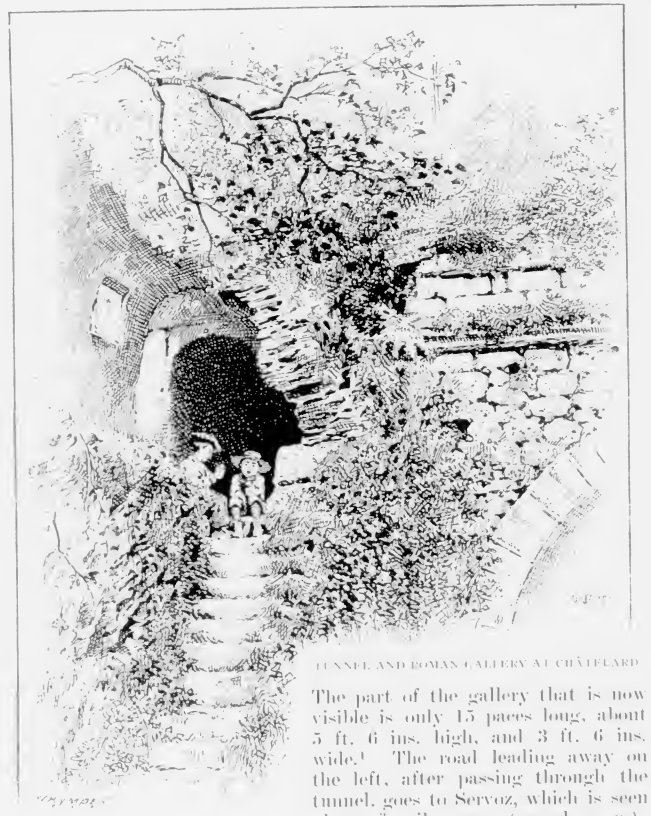

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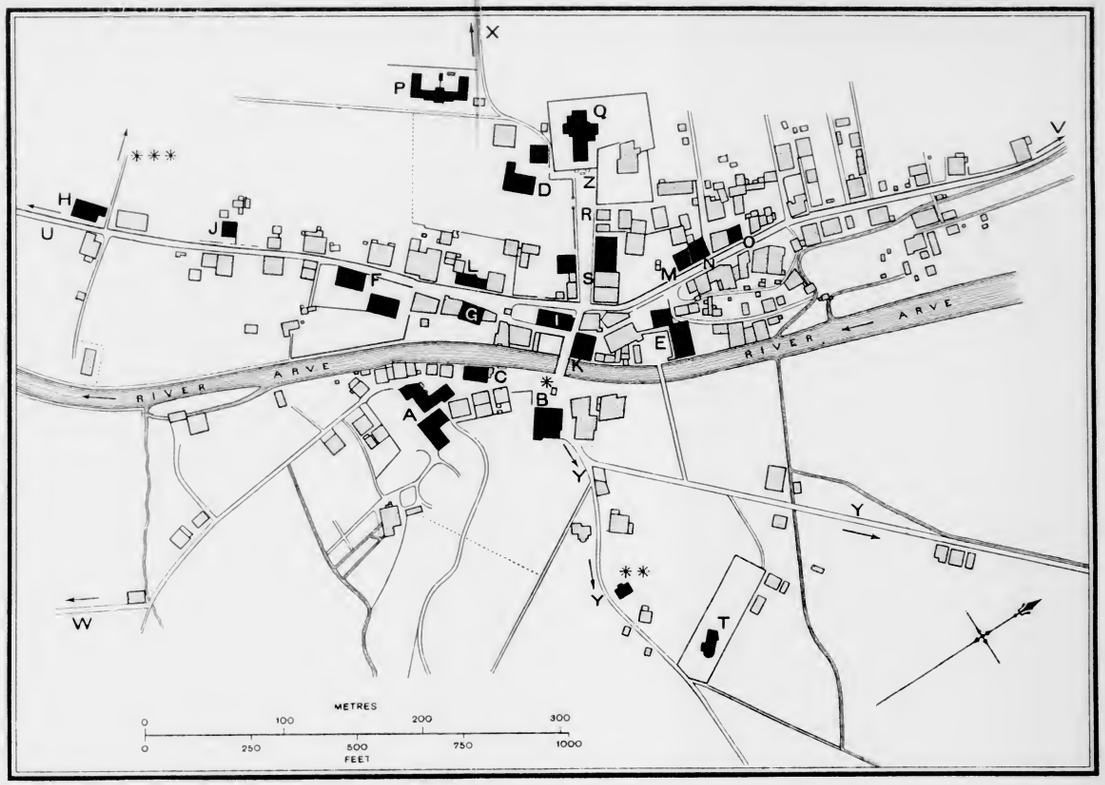
picturesque scenery. Nothing can well be finer than the views of the Aig. du Goûter and the Aig. de Bionnassay which can be seen for several kilomètres over this part of the route. The *summit* of Mont Blanc, however, is hidden. The Hotel des Montées has woods all around it, and is another place where persons of quiet tastes can find much enjoyment. After leaving it, the road enters a sort of defile, and for some distance is carried along a shelf cut out of the face of a cliff. In 20 to 22 min. from les Montées the diligence crosses to the right bank of the Arve, and after another kilomètre recrosses to the left bank, just below the village of les Houches. Then you enter the Valley of Chamonix, the vista begins to open out, and a line of Aiguilles is seen, commencing on the right with the Aiguilles du Midi, du Plan, de Blaitière, and des Charmoz, followed by the Dru, Verte, and Chardonnet. After passing through the village of les Bossons the road again recrosses to the right bank, by the Pont de Perrolataz, and a few minutes later you are at Chamonix.

"The majestic glaciers, separated by great forests, crowned by granitic rocks to an astonishing elevation, carved into gigantic obelisks and intermixed with snow and ice, offer one of the grandest and most remarkable spectacles that it is possible to imagine. The cool, pure air that one breathes, so different from the stuffy atmosphere of Sallanches, the high cultivation of the valley and the pretty hamlets one passes, give the idea of a new world, a sort of Earthly Paradise." De Saussure's *Voyages*, vol. i, p. 359.

To this eulogium it may be added that everyone has perfect liberty to roam anywhere, at will.

PLAN OF CHAMONIX.



REFERENCES.

A. GRAND HOTEL COUTTET.
B. HOTEL ROYAL & DE SAUSSURE.
C. ,, DE LA POSTE.
D. ,, DU MONT BLANC.
E. ,, D'ANGLETERRE.
F. ,, DES ALPES.
G. ,, DE PARIS.
H. ,, BEAU SITE.
I. ,, DE FRANCE & DE L'UNION.
J. ,, VILLA BEAU SEJOUR.
K. HOTEL DE LA TERRASSE.
L. ,, SUISSE.
M. ,, DE LA CROIX BLANCHE.
N. ,, DE FRANCE.
O. ,, DE LA PAIX.
P. SCHOOLS.
Q. THE CHURCH.
R. PLACE DE L'ÉGLISE.
S. BUREAU DES GUIDES.
T. ENGLISH CHURCH.
U. ROAD TO SALLENCHES, ETC.
V. ,, ARGENTIÈRE, ETC.
W. ,, ROUTE TO MONT BLANC.
X. ,, PATH TO THE BREVENT VIA PLANPRAZ.
Y. ,, TO THE MONTANVERT.
Z. MONUMENT TO BALMAT.
* ,, TO DE SAUSSURE.
** LOPPÉ'S GALLERY.
*** PATH TO THE BREVENT VIA BEL ACHAT.

CHAPTER IX.

UPON CHAMONIX.

CHAMONIX—ITS POPULATION—CONSEIL MUNICIPAL—REVENUE—MEANS TAKEN TO MAKE IT A POPULAR RESORT—COMMUNAL FORESTS—HOTELS—BUREAU DES DILIGENCES—LA SOCIÉTÉ DES VOITURES—SHOPS—BUREAU DES GUIDES—MAIRIE—THE CHURCH—MONUMENT TO JACQUES BALMAT—PATH TO THE BREVENT—SCHOOLS—THE LAITERIE—THE SHAM—MONUMENT TO DE SAUSSURE—PATH TO THE MONTANVERT—THE ENGLISH CHURCH—SULPHUROUS SPRING—PATH TO MONT BLANC—FOREST RETREATS.

THE **Village of Chamonix** is situated on nearly level ground, partly on the right and partly on the left bank of the River Arve.—**Altitude**, 3445 feet (1050 mètres). It is the *chef lieu* of the Canton of the same name, which also comprises the Communes of les Houches, Vallorcine, and Servoz.

Population.—According to a Census taken in 1896, Chamonix (including the numerous little allied hamlets and villages) has a population of 1923; Argentière has 487, and les Houches 1028; which makes the total population of the *Valley* 3438, in 1896. It increases slowly. M. Perrin believes that so long ago as 1411 the population of the valley was somewhere about 1140, and he says it was found from a census taken in 1773 by the Chapter of Sallanches that there were 444 hearths in the valley, namely, 200 at Chamonix, 160 at les Houches, and 84 at Argentière. Allowing 5 persons to a household, this would make the population of the valley 2220, in 1773.

Each male native of the Canton of Chamonix, on attaining his twenty-first year, has the right to vote at the election of the **Conseil Municipal.** This body has 16 members. The ordinary sessions are held four times a year at Chamonix, when the Communal Budget is discussed, and questions relating to all works of public utility in the Canton. All contracts, or specifications for new roads, bridges, or schools which are proposed must be submitted to, and all disbursements proposed to be made from the Communal Funds must be sanctioned by, the Préfet of the Department.

The **Revenue** of the Commune of Chamonix is chiefly derived from the rents of the hôtels and châlets, frequented by tourists during the summer months, which are built on the upper slopes of the valley. The **Taxes** paid in the Commune of Chamonix are of two classes—1. *la Taxe Immobilière*, which goes to the Canton, is levied on houses and land. 2. *la Taxe Personnelle*, which goes to the Republic. Owing to the Canton of Chamonix being situated in

THE VILLAGE OF CHAMONIX, SEEN FROM THE GRANDS MULETS.

the '*Zone*' which was established by Napoleon III on the annexation of Savoy, there are no duties on coffee, tea, tobacco, chocolate, etc.[1]

Reparation of Paths.—Every male inhabitant of the Commune between the ages of 18 and 60 is compelled to contribute three days' labour per annum (or to furnish a substitute) in order to repair the paths leading to the various points of interest in the Valley. Everyone who has a horse, mule, or cart, must also place them at the disposal of the Commune for three days each year, for the same purpose. The mules are all registered (the numbers being stamped on the hoof of the near fore-foot), and in the event of war or mobilization they would be placed at the service of the State. They are inspected annually by an Officer of the French Army.

Communal Forests.—Every year, a certain number of trees in the Communal woods are marked by the *Administration des Forêts*, and are felled and divided among those ratepayers who have applied for a share. A nominal sum is paid to the Commune for the price of the wood; and the cost of felling the trees and bringing them down to the valley is borne by those who participate in the distribution. In Chamonix there is very little land used as Communal grazing ground, where the ratepayers have the right to send their cattle.

The **Voters** in the Canton of Chamonix are represented by a 'Conseiller d'Arrondissement' at Bonneville, who is elected for six years; and also by a 'Conseiller-Général' at Annecy who remains in office for the same period. The **Maire** is elected by the Conseil Municipal for four years.

Hotels on the left bank.—Grand Hotel Couttet (large and well-conducted, with good gardens); Hotel Pension de la Poste; Hotel Royal & de Saussure. **On the right bank**—Grand Hotel du Mont Blanc (large and good, with gardens); Hotel de France & de l'Union Reunie (very central); Hotel de la Mer de Glace (new hotel, pleasantly situated); Hotel Beau-Site; Hotel Villa Beau Sejour; Hotel des Alpes (large and good); Hotel de Paris; Hotel Suisse; Hotel de la Terrasse; Hotel d'Angleterre (one of the oldest); Hotel de la Croix Blanche; Hotel de France; Hotel de la Paix. The positions of all the Hotels are indicated on the Plan of Chamonix, with the exception of the Hotel de la Mer de Glace, which is at the extreme northern end of the village, on the road to Argentière, and beyond the range of the Plan.

The main street, running right through Chamonix, is called the **Rue Nationale**, and the large open space leading from it at a right angle towards the Church is the **Place de l'Eglise.** The **Bureau of the Diligences** which are run by the "Société anonyme de la correspondance des Chemins de Fer Paris-Lyons-Medit. and Jura-Simplon" is in the Rue Nationale at the angle of the Place. In the middle of the season places should be secured well in advance, as these diligences to Cluses fill to overflowing. *This Company has one scale of charges*

[1] The prices printed on the labels of packets of French tobacco and cigars are the prices for France in general, but in the 'free zone' they should be supplied to the purchaser *less duty*.

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In the Rue Nationale, close to the Diligence Bureau, is the Bureau of the Company of **Voituriers of Chamonix** (Société des Voitures de Chamonix pour Martigny et Vernayaz et des courses dans la vallée et les environs). The 'Tarif' of this Company is given in the Appendix. In engaging carriages for Martigny, if one wishes to go to the Railway-Station at Martigny, it is well to stipulate expressly in writing or in the presence of witnesses to be conveyed to Martigny *Railway-Station.* If this is not done, attempts at imposition are frequently made by the voituriers, who interpret the contract to mean that the traveller has to descend at some *hotel* at Martigny, and try to extort an additional sum for going to the Railway-Station. Another point to be noticed is that travellers taking carriages of this Company are *compelled* to change vehicles at the Tête Noire, and have to submit to a long detention there before they are able to proceed.

There are numerous **shops** in Chamonix where all travelling requisites can be obtained, the chief part of which are in the Rue Nationale and on the Place de l'Eglise; and there are several good ones where **crystals** and local products are displayed.[1] One of the principal, at the corner of the Place de l'Eglise opposite to the Diligence Bureau, is kept by **M. Venance Payot,** who is author of a number of interesting *brochures* upon the Botany, etc., of Mont Blanc and the Valley.

A few doors down the north side of the Place de l'Eglise there is the **Bureau des Guides.** The Guides of Chamonix have formed themselves into an Association called "La Compagnie des Guides de Chamonix," which makes rules for its members and regulations for tourists. The Bureau is a great convenience (but is not used as much as it might be), as all information can be obtained there about Guides, Porters, Mules, prices, and anything relating to excursions which are upon the list. The Guide Chef, who presides in the Bureau, is always ready to give information, and will be able to say what Guides are available. Many of them do not inhabit Chamonix itself, and not a few live so far away as Argentière and le Tour. It takes time to summon them, but this will be done by the Guide Chef. The 'Tarif' of Excursions will be found at the end of this volume.

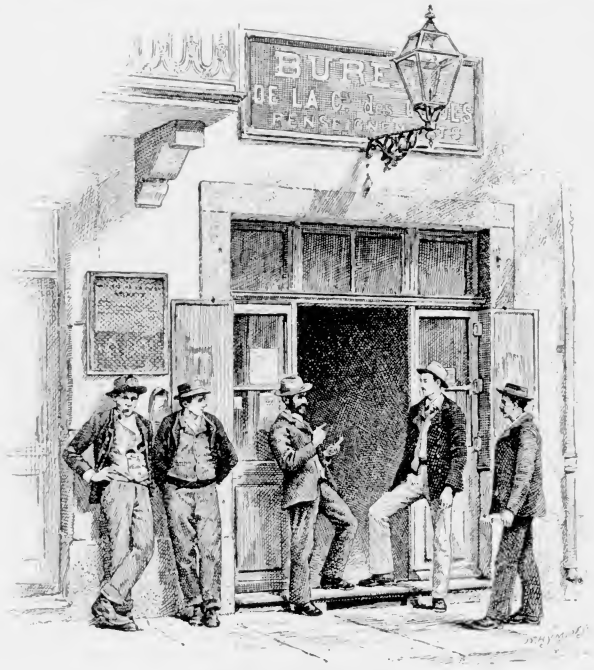
The repetition of the family names is often a cause of perplexity. There are at the present time upon the Register 6 of the name of Tairraz, 8 Bossonneys, 12 Charlets, 14 Ravanels, 15 Payots, Balmats, and as many Cachats, 16 Ducrozs, 29 Couttets, and 38 Simonds!

[1] Including Honey. Everyone who has written about Chamonix, from Peter Martel onwards, has spoken about its honey, which is considered to be of a very superior quality. Large quantities of genuine honey of the valley are used in the hotels; but although 'Chamonix honey' is on sale in many of the principal cities of Europe, I have been unable to learn that any is *exported* from Chamonix.

Martel says, "This Honey is white, resembling very much that of Narbonne for Colour, but not for taste." De Saussure remarks that the reason for its whiteness and particular excellence is unknown. "The bees are the same, for the Chamoniards recruit their hives from the neighbouring villages." Yet the honey of the nearest villages, such as Servoz and St. Gervais, is quite commonplace. *Voyages,* § 743.

The list given in the Appendix will go some way towards enabling a traveller to pick out the guide he wants, as it gives their ages, their villages, and other information. It has been corrected by M. the Guide Chef.

The Mairie is in the same building as the Bureau des Guides. In the Archives there are a large number of documents of the 15th, 16th, and 17th centuries, including records of lawsuits and local



BUREAU OF THE GUIDE CHEF.

squabbles, amongst which there is evidence of a considerable amount of friction between the Syndics of Chamonix and the Canons of Sallanches. Many early documents, I am informed, perished by being transported for safety to Fort du Bard.

Chamonix Church is situated at the north-western end of the Place. According to M. Perrin, there were five Chapels in the Church of the Priory (Notre-Dame, St. Félix, St. André, St. Sébastien, and St. Jean-Baptiste). The Chapel of Notre-Dame is incorporated in the existing

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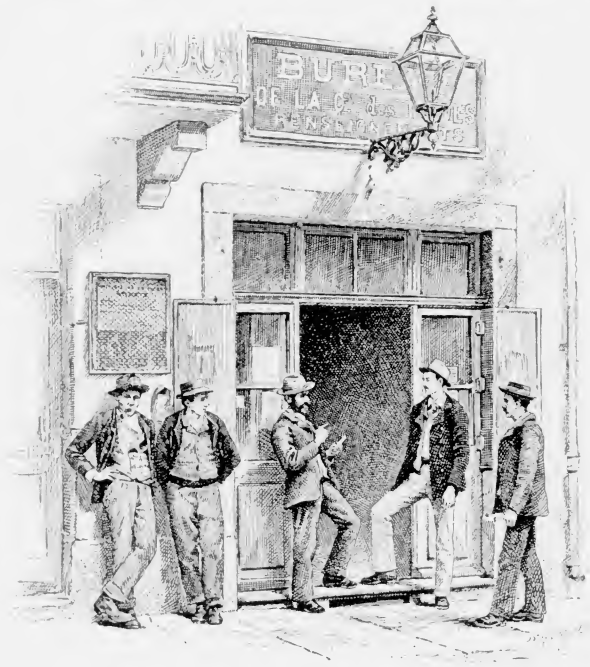

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Church, and this appears to be almost the sole remaining relic of the Priory. Upon the northern side of the Church, there are the graves of the Rev. G. McCorkindale, and of Mr. Beau, to which reference was made upon page 56. Visitors are admitted to the Church at all reasonable times.

Monument to Jacques Balmat.—In front of the Church there is the monument to Balmat erected by the French Alpine Club, which does honour to the Club as well as to the Guide. See page 18.

CHAMONIX CHURCH.

The Path to the Brevent starts on the western side of the Church. After a few minutes (across fields) it divides,—the left hand branch leads to the Brevent *viâ* Bel Achat, and the other goes *viâ* Plampraz.

Schools.—The large building to the west of the Church was erected by the Commune. Considerable sums have been spent from the Communal funds, for a number of years, over the erection of new school buildings. Instruction in English is given.

In the Rue Nationale, on the same side as and close to the Hotel des Alpes, there is the **Laiterie de Chamonix**, belonging to a Co-operative Society founded in 1891, with a capital of 18,000 francs. The object of this institution is to enable householders to have the

milk of their cows and goats converted into butter and cheese by the most scientific processes, and by the newest and most approved apparatus, which would be impossible for any private individual to provide for his own use. Every morning and evening about 100 persons send their milkings to the Laiterie. The amounts are carefully measured and recorded in a Register, and also in a pass-book which the householder keeps as a check. During the course of the year the butter and cheese are sold from time to time; and, after the expenses of the Laiterie are paid, the profits are divided amongst those who have taken part in this system of Co-operation. The Director holds a Diploma from one of the Government Agricultural Schools. In 1894, 130,000 litres of milk were received, which are said to have yielded 10,400 kilos. of cheese and 1900 kilos. of butter.

The Sham Picturesque.—Between the 2nd and 3rd kil. stone from Chamonix on the road to Sallanches there are some *sham ruins* and *sham rocks*, worthy of the best days of Rosherville Gardens. Strangers arriving at Chamonix are frequently gulled by them, and suppose they are the ruins of 'the Priory.' A closer approach shews that they are made of lath and plaster. Though this piece of folly (which is said to have been perpetrated by an Englishman) has little that is attractive for sane persons, a visit to the place is not altogether loss of time, merely to see its artificial pool, with *real water*, but of such exquisite purity that one suspects it to be an ingenious fraud.

On the left bank of the Arve, on crossing the bridge, one sees in the centre of the open space in front of the Hotel Royal a **monument to De Saussure.** The Professor is represented in a costume resembling that of a General of the Revolution of 1789, and Jacques Balmat is inspiring him to ascend Mont Blanc by pointing away from the mountain. M. Chenal bequeathed 4000 francs for the erection of a monument to De Saussure in the Commune of Chamonix. The Commune added 4000 francs to the legacy, but feeling that larger sums were necessary to erect 'un monument digne de ce savant Génévois,' appealed to outsiders to assist. The French Academy of Sciences granted 500 francs, and the Conseil-Général of the Department gave as much more. This was supplemented by contributions from the French Alpine Club and by private persons, and upon Aug. 28, 1887, the monument was unveiled, with much ceremony.

The Path to the Montanvert commences at the lane on the left hand (northern side) of the Hotel Royal. A few yards past the hotel the road divides—one branch goes straight on, and the other turns off to the left. This latter in about three minutes turns sharply to the right, and rejoins the other path. The two ways are used about equally. A few yards down the former, one comes to the *atelier* of **M. Tairraz,** *the* photographer of Chamonix, who keeps an interesting assortment of views and scenes taken by himself; and just beyond his establishment there is the **Gallery of Alpine Paintings by M. Gab. Loppé.** Admission free.

The English Church is a little farther on, upon sloping ground overlooking Chamonix. The interior of this building is distinguished

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by naked simplicity. It wants colour, and the walls more broken up. It contains three tablets; one in memory of Albert Smith, another to his brother Arthur, and the third to Capt. Arkwright, which bear the following inscriptions.

"To the Memory of Albert Smith, who died on the 23rd of May, 1860; in the 44th year of his age. This tablet is erected here in the English Church at Chamounix by his affectionate brother Arthur Smith."

"In Memory of Henry Arkwright, born Dec. 16, 1837, fourth son of John Arkwright of Hampton Court in Herefordshire, Capt. in H.M. 34th Regt. of Foot and Aide de Camp to the Lord Lieutenant of Ireland. He was lost in an avalanche while ascending Mont Blanc, October 13, 1866.—He shall give his Angels charge over thee they shall bear thee up in their hands."

At the back of the Church, close to the Montanvert path, is the grave of Mr. Nettleship, with this inscription:—

Richard Lewis Nettleship Fellow and Tutor of Balliol College, Oxford. Born December 17, 1847, Died on Mont Blanc, August 25, 1892.—He maketh the storm a calm.

Admittance to the Church can be obtained on application at the Hotel d'Angleterre, where the keys are kept.

A little farther on, up the valley, there is a **Sulphurous Spring.**—Take the path to the Montanvert that is nearest to the River Arve, and, after walking about five minutes, the smell will guide you to the Spring. It bubbles out in a meadow a few yards off the road, on the right hand, or eastern side. No use is made of the water. Formerly it issued a few hundred yards higher up, and the Commune erected a small building over it. The water runs into a neighbouring brook, and its odour can be smelt a long distance away. Although the stones round the source are encrusted with sulphur, the taste of the water is not strong enough to be unpleasant. The temperature at the source is 50° F. This spring was visited by Peter Martel, who remarked of it (in the French version of his narrative)—

"A word must be said about a spring one comes across in going up the mountain, which yields a very good mineral water, containing iron and sulphur. It is a pity that it is not more abundant, for it is delicious and very cool—it is the first that one finds on the way to the Montanverd."

The Path to the Pierre Pointue, and for the ascent of Mont Blanc leads from the De Saussure monument past the Hotel de la Poste, and in about three minutes turns sharply to the right. Both on this route, on the Planpraz way to the Brevent, or upon the path to the Montanvert one can get in ten minutes into the shade of forests; but the most charming of all **forest retreats** within a few minutes of Chamonix is arrived at by taking the path to the Montanvert which is nearest to the Arve, and by continuing along it towards the end of the Mer de Glace (over nearly level ground), instead of turning upwards towards the Montanvert. For those who love quiet, who are unable to put forth exertion, and who are not insensible to the beauties of nature, this is the place.

HOTEL DU MONTANVERT.

CHAPTER X.

EXCURSIONS FROM CHAMONIX.

THE MONTANVERT AND THE MER DE GLACE—THE CHAPEAU—ASCENT OF THE BRÉVENT—THE FLÉGÈRE—AIGUILLE DE LA FLORIAZ—ASCENT OF THE BUET—THE COL DE BALME AND THE TÊTE NOIRE—FISHING FOR ÉCREVISSES—SERVOZ—THE GORGE OF THE DIOZA—COL DE VOZA—PAVILLON BELLEVUE—ST. GERVAIS—GLACIER DES BOSSONS—GROTTO DES BOSSONS—BALMAT'S HOUSE—CASCADE DU DARD—PIERRE POINTUE—PLAN DES AIGUILLES—PIERRE À L'ECHELLE—GRANDS MULETS—MONTAGNE DE LA CÔTE.

SINCE the establishment of the new Montanvert Hotel, and the *auberge* at Lognan (in place of the old châlet), it has become customary for those two places to be used as starting-points for many excursions which were formerly made from Chamonix. There still remain, however, a number of excursions for which the Village is the centre, and first of all must be placed the '*course*' to the **Montanvert** and **Mer de Glace (Cx. T. 5, 6, 27, 29).**[1]

The path commences at the side of the Hotel Royal (see p. 97), passes the group of houses called les Mouilles, and, about one quarter way up in time, arrives at a refreshment shed named Planard (les

[1] The abbreviations in **antique** type in the following chapters (**Cx. T. 5, 6, 27,** and so on) are references to the Chamonix 'Tarif des Courses,' which is given in the Appendix. The numerals correspond with the Numbers which are affixed in the List to the various Excursions.

The *times* quoted in this and in the following chapters are actual going times, exclusive of halts.

by naked simplicity. It wants colour, and the walls more broken up. It contains three tablets; one in memory of Albert Smith, another to his brother Arthur, and the third to Capt. Arkwright, which bear the following inscriptions.

"To the Memory of Albert Smith, who died on the 23rd of May, 1860; in the 44th year of his age. This tablet is erected here in the English Church at Chamounix by his affectionate brother Arthur Smith."

"In Memory of Henry Arkwright, born Dec. 16, 1837, fourth son of John Arkwright of Hampton Court in Herefordshire, Capt. in H.M. 34th Regt. of Foot and Aide de Camp to the Lord Lieutenant of Ireland. He was lost in an avalanche while ascending Mont Blanc, October 13, 1866.—He shall give his Angels charge over thee they shall bear thee up in their hands."

At the back of the Church, close to the Montanvert path, is the grave of Mr. Nettleship, with this inscription:—

Richard Lewis Nettleship Fellow and Tutor of Balliol College, Oxford. Born December 17, 1847, Died on Mont Blanc, August 25, 1892.—He maketh the storm a calm.

Admittance to the Church can be obtained on application at the Hotel d'Angleterre, where the keys are kept.

A little farther on, up the valley, there is a **Sulphurous Spring.**—Take the path to the Montanvert that is nearest to the River Arve, and, after walking about five minutes, the smell will guide you to the Spring. It bubbles out in a meadow a few yards off the road, on the right hand, or eastern side. No use is made of the water. Formerly it issued a few hundred yards higher up, and the Commune erected a small building over it. The water runs into a neighbouring brook, and its odour can be smelt a long distance away. Although the stones round the source are encrusted with sulphur, the taste of the water is not strong enough to be unpleasant. The temperature at the source is 50° F. This spring was visited by Peter Martel, who remarked of it (in the French version of his narrative)—

"A word must be said about a spring one comes across in going up the mountain, which yields a very good mineral water, containing iron and sulphur. It is a pity that it is not more abundant, for it is delicious and very cool—it is the first that one finds on the way to the Montanverd."

The Path to the Pierre Pointue, and for the ascent of Mont Blanc leads from the De Saussure monument past the Hotel de la Poste, and in about three minutes turns sharply to the right. Both on this route, on the Planpraz way to the Brevent, or upon the path to the Montanvert one can get in ten minutes into the shade of forests; but the most charming of all **forest retreats** within a few minutes of Chamonix is arrived at by taking the path to the Montanvert which is nearest to the Arve, and by continuing along it towards the end of the Mer de Glace (over nearly level ground), instead of turning upwards towards the Montanvert. For those who love quiet, who are unable to put forth exertion, and who are not insensible to the beauties of nature, this is the place.

HOTEL DU MONTANVERT.

CHAPTER X.

EXCURSIONS FROM CHAMONIX.

THE MONTANVERT AND THE MER DE GLACE—THE CHAPEAU—ASCENT OF THE BRÉVENT—THE FLÉGÈRE—AIGUILLE DE LA FLORIAZ—ASCENT OF THE BUET—THE COL DE BALME AND THE TÊTE NOIRE—FISHING FOR ÉCREVISSES—SERVOZ—THE GORGE OF THE DIOZA—COL DE VOZA—PAVILLON BELLEVUE—ST. GERVAIS—GLACIER DES BOSSONS—GROTTO DES BOSSONS—BALMAT'S HOUSE—CASCADE DU DARD—PIERRE POINTUE—PLAN DES AIGUILLES—PIERRE À L'ECHELLE—GRANDS MULETS—MONTAGNE DE LA CÔTE.

SINCE the establishment of the new Montanvert Hotel, and the *auberge* at Lognan (in place of the old châlet), it has become customary for those two places to be used as starting-points for many excursions which were formerly made from Chamonix. There still remain, however, a number of excursions for which the Village is the centre, and first of all must be placed the '*course*' to the **Montanvert** and **Mer de Glace (Cx. T. 5, 6, 27, 29).**[1]

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Planaz). After this, nearly all the way is through forest, by a fair path. At the Source de Caillet (4879 feet), which is rather more than half way up in time and exactly half way in height, there is another refreshment shed, which is the last place where drinks can be had, either artificial or natural, until the Montanvert. Near approach to it is indicated by the trees becoming thinner, and when this happens you have before you the lower end of the Mer de Glace, or Glacier des Bois, as it is termed,[1] and the Aiguille du Dru, which is, of its kind, the most striking object in the Range of Mont Blanc. The path then bears to the right, and you presently arrive at **the Montanvert Hotel** (6303 feet), which occupies a prominent and commanding position on the left bank of the Glacier. Time ascending, 2 hs. going steadily. In descending, $\frac{3}{4}$ h. is quick time.

The **Hotel du Montanvert** is plain in appearance, but is more comfortable than one would expect from its exterior. Pension from 9 to 10 francs a day; rooms, 3 to 4 francs; Déjeuner, café complet, 1.50, Lunch 3 fr., Dinner 5 fr. The first shelter that was erected at this place was a shepherd's hut, which the Chamoniards called 'the Château.' This primitive abode was succeeded by a *Pavillon* which was put up in 1779 at the expense of an Englishman named Blair, living at Geneva. Prof. J. D. Forbes says the *Pavillon* or *Hospital* was superseded in 1795 by the building dedicated '*à la Nature*,'[2] that is still in existence (used now as a store-house). This, in its turn, was abandoned when the first (or old) Montanvert inn was opened in 1840; and that very humble building served its purpose until 1870, when the present Montanvert Hotel was completed. There has thus been the following succession of edifices—The 'Château,' 'Blair's Hospital,' 'A la Nature,' 'the Old Montanvert,' and the present Hotel. Illustrations are given of the two latter.

There is a diversity of opinion regarding the proper manner of spelling the name Montanvert. Some writers use Montantverd, others Montainver, or Mont-Anvert, Mont Anver, Montanvers, Montenvers, and Mont-en-Vert. Bourrit said (in 1785) "it is called the Montanvert because pasturage is found there, the verdure of which contrasts beautifully with the horrors of the icy valley." Mons. C. Durier (in 1877) adopts quite a different view.[3]

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"BLAIR'S HOSPITAL.
UTILE DULCE."

"At a later period, a small solid stone house of a single apartment, was built at the expense of M. Desportes, the French Resident at Geneva, having a black marble slab above the door, with the inscription *A la Nature*. On my first visit to Chamouni this was the only building, but soon after a much more substantial and effectual shelter was erected at the expense of the *Commune* of Chamouni, and is let to the present tenant, David Couttet (together with the grazing round), for the considerable sum of 1400 francs." *Travels through the Alps of Savoy*, by James D. Forbes, F.R.S., Edinburgh, 1843.

[3] See his *Mont Blanc*, chapter ix.

The appearance of the **Mer de Glace** from the Montanvert must be known to everyone from photographs and drawings. The position occupied by the Hotel is one of the very best that could be selected for viewing this famous Glacier, and the *coup d'œil* out of the upper windows upon a fine moonlight night is a thing to be seen. With the greater part of the Glacier in gloom, and only the crests of the icy waves sparkling and glittering, it is easy to imagine that the Mer de Glace is a frozen sea. The Hotel is the property of the Commune, and the Lease is put up to public competition. The Lessee is bound to maintain 'the crossing' at the Mer de Glace, and the paths along the moraines, in the best possible condition, and to employ a *cantonnier* expressly for that purpose. He has right of pasturage gratis for a certain number of animals, and *upon no account is to varnish his furniture!* The water supplied at this Hotel is very bright and good. It is conveyed through leaden pipes from a spring a little above 'les Ponts.' The 'old' Montanvert[1] is close alongside the present Hotel, and has the temple dedicated to '*la Nature*' behind it.

The view from the windows of the Hotel embraces the portion of the Glacier which has been rendered classical by the labours of Forbes and Tyndall. In 1842, Principal J. D. Forbes commenced his investigation of the motion of glaciers, and initiated the method of measuring the surface-movements of the ice by means of a theodolite. He determined the velocity at various places, in the centre, and at the sides; and discovered that movement continued day and night; that the higher part of the glacier (its feeder the Glac. de Léchand) moved *slower* than the lower part near the Montanvert; and that the central part of the glacier moved *faster* than the edges in a very considerable proportion. Forbes' investigations were continued by Dr. John Tyndall in 1857; and extended in 1859, on Dec. 28-29, by measurements of the *winter* movements of the glacier, opposite to the Montanvert. In summing up the results obtained by themselves and others, Tyndall said, "the *proof* of the quicker central flow belongs in part to Rendu, but almost wholly to Agassiz and Forbes; the proof of the retardation of the bed belongs to Forbes alone; while the discovery of the locus of the point of maximum motion belongs, I suppose, to me." Forbes' *Travels through the Alps of Savoy*, and

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Tyndall's *Glaciers of the Alps* will be found interesting to read during a stay at the Hotel.

For excursions to the upper end of the Mer de Glace, or in the basins of its tributaries the Glacs. de Talèfre, de Leschaux, and du Géant, take the path which leads past the 'old' Montanvert. This path rises at first, and in a few minutes one comes to '**les Ponts,**' which are a series of steps cut on the face of steeply inclined rocks, a considerable height above the glacier. Iron handrails are provided. The path then descends to the lateral moraine of the left bank, which is followed for a short time. Many of the boulders here are insecurely poised, and caution should be exercised. The track from this point to the *upper* end of the glacier is laid down on the map. One can *return* to the Montanvert down the centre of the glacier, and obtain good practice in cutting amongst its contorted and fissured ice; but, more usually, tourists return by 'les Ponts.'

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The **Aiguille du Dru,** 12,516 feet, on the opposite side of the Mer de Glace, is incomparably the most striking object that is seen from the Montanvert, and the views of it which can be obtained from this direction are the finest one can find. The Aiguille is imposing in two senses. It *appears to be the culminating point of the opposite block of mountains*, when, actually, it is only a pinnacle upon one of the ridges of the Aig. Verte (see the illustrations upon pages 106, 121). The real summit of the Dru cannot be seen from the Hotel. When looking up the Mer de Glace, the highest points which are seen at the end of the vista are the **Grandes Jorasses,** 13,800 feet, the loftiest mountain in the range after Mont Blanc itself (on the left); **Mont Mallet,** 13,084 feet (about the centre), with the **Pic du Tacul,** 11,280 feet, in front of it; and the **Aig. du Géant,** 13,156 feet (on the right). The highest point of the Grandes Jorasses cannot be seen from this side. It is behind the left hand of the two peaks which are visible. The great wall of the Grandes Jorasses is more than 5 miles from the Montanvert, and requires closer approach to be appreciated; and the same may be said of the Aig. du Géant, which, *near at hand*, looks a most impudent pinnacle. The **Aig. des Charmoz,** 11,293 feet, is the principal feature on the left bank of the Mer de Glace.

The path to '**the crossing**' starts from the back of the Hotel; and a few yards off it, on the land side, just before it arrives at the ice, there is the large block of rock called '**the Englishmen's Stone,**' inscribed "Pocock et Windham 1741." See illustration upon page 1.

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THE AIGUILLE DU DRU.

The track across the glacier is sufficient guide to the other side. The crossing can be effected in 10 min., or less. There is a refreshment shed on the right bank.

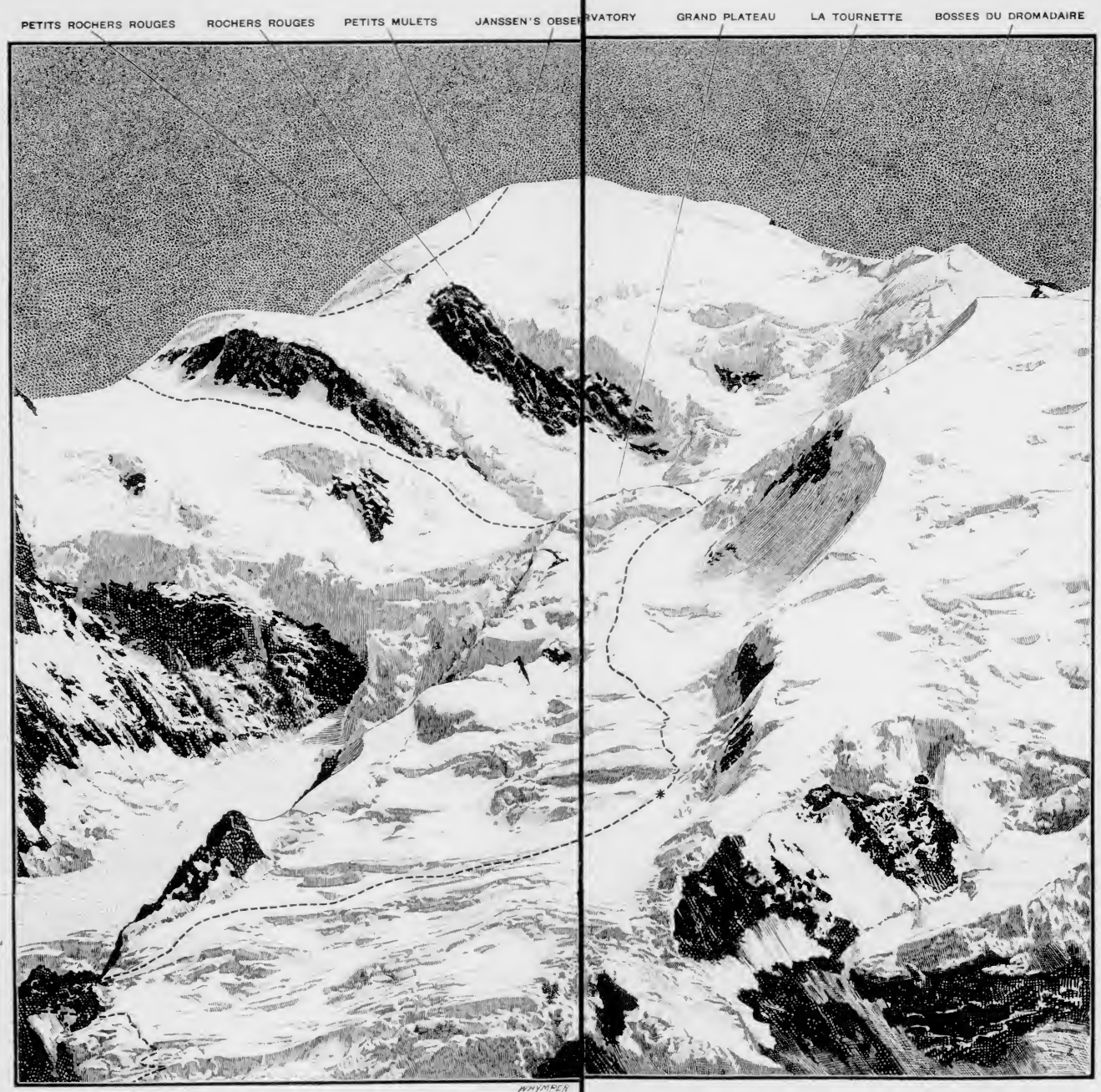
In returning to Chamonix one can go *viâ* **'the Chapeau,'** 5082 feet, and the end of the Glacier des Bois to see the source of the Arveyron, instead of going back by the Montanvert path.[1] At first the way lies along the moraine on the right bank, and then by **'the Mauvais Pas'** across the face of some precipitous rocks. Rails to hold are fastened along the parts where a slip would be objectionable. There is a building for refreshments at the Chapeau that is an *annexe* to the Montanvert Hotel. Time from one to the other about 1 h. 20 min. The place takes its name from a rock called 'the Chapeau' which is said to have been used formerly by chasseurs for bivouacs. Tyndall says of the view—

"The scene to my right was one of the most wonderful I had ever witnessed. Along the entire slope of the Glacier des Bois, the ice was cleft and riven into the most striking and fantastic forms. It had not yet suffered much from the wasting influence of the summer weather, but its towers and minarets sprang from the general mass with clean chiselled outlines. Some stood erect, others leaned, while the white *débris*, strewn here and there over the glacier, showed where the wintry edifices had fallen, breaking themselves to pieces, and grinding the masses on which they fell to powder." *Glaciers of the Alps*, pp. 39-40.

From the Chapeau a mule path leads down through beautiful forest to the terminal moraine of the glacier. To visit the source of the Arveyron bear round to the left, on arriving at the moraine. In 1895, the icy vault from which the torrent usually issues *did not exist*. Return to Chamonix can be effected from this spot either by passing through the hamlet of les Praz, and thence along the high road; or, more directly, by the path through the forest and the left bank of the Arveyron and Arve, of which I have spoken on page 98. Time Chapeau to Chamonix about 1 h. 30 min.

The Ascent of the Brévent, 8284 feet **(Cx. T. 8, 9, 10, 11)**, must not be omitted by a visitor to Chamonix. There are two ways,—one *viâ* Planpraz, and the other by Bel Achat. The former starts against the church, and mounts 2000 feet or so through forest. The rest of the way is shadowless. At **Planpraz**, 6772 feet, there is a Pavillon (not recommended) where refreshments may be obtained. Time from Chamonix about 2 h. 20 min. From this place one can pass over into the Valley of the Dioza, but there is no advantage in doing so, as the Dioza can be reached more easily *viâ* Servoz. At Planpraz the path to the Brévent turns to the left (West), and gets round to the back of the peak. On the latter part of the way, irons are fixed in some places to assist the tourist. The top of the Brévent is large, and there is a cairn, a ruined châlet, and a drinking-booth at the summit. Time from Planpraz about 65 min. The path *viâ* Bel Achat commences on the right hand side of the Hotel Beau-Site. The first part of the way for about $\frac{3}{4}$ h., through the hamlet of les Mossons and forest, rises gently; it then steepens, but continues

[1] Or one can return most of the way to the Source de Caillet, and then take a path on the right which leads to the foot of the Glac. des Bois.



MONT BLANC, FROM THE BREVENT,

FROM A PHOTOGRAPH BY EDWARD WHYMPER.

MONT BLANC, FROM THE BREVENT,

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through well-shaded forest. Shortly after emerging from the trees, one passes a drinking-shed (about 4900 feet, not tenanted at night), and thence the ascent to **Bel Achat**, about 6900 feet (small inn, poor place), is rapid, with many zigzags. The remainder of the way is less steep, the final part of the ascent being the same as by Planpraz. Time by this route about 4 h. 20 min. The descent by Planpraz takes about 1 h. 40 min., and by Bel Achat about 2 hs.

The view of Mont Blanc from the Brévent is the finest *near* one that can be had on this side. The best point for seeing the routes which are ordinarily taken, and for watching ascents, is about half way up between Bel Achat and the top. The accompanying view is taken from that point. Mont Blanc looks its best under afternoon light (after 3.30 p.m.). The Brévent gives its name to the entire range or *massif* between the valley of Chamonix and that of the Dioza, that includes several other excellent points of view, of which the most frequently visited is

The Flégère, 5925 feet[1] **(Cx. T. 7, 9, 11).** The usual way to the Flégère is along the high road to Argentière as far as the village of les Praz. The mule-path leaves the road on the left a little beyond the village. Pedestrians can avoid crossing and recrossing the Arve, and save time, by quitting the high road at les Chables, by a path across fields that starts just against the bridge. At the meeting of the two ways, the path at once commences to rise steeply, and mounts to a considerable elevation by shadowless zigzags. Sighs for umbrellas are often uttered here. It then passes for about an hour through forest, and soon afterwards the Hotel at **la Croix de la Flégère** is seen. Comfortable, good food, and reasonable prices. The view of Mont Blanc from this place is interesting from shewing the long distance the summit is set back from the valley, and the relative positions and importance of various points on the mountain. *The* feature of the view from the Flégère is the fine view of the Aig. Verte and the Mer de Glace, on the opposite side of the valley. The ascent of the Brévent is often combined with a visit to the Flégère (there is a path between the two places), and this can be readily accomplished if an early start is made. Time Chamonix to la Flégère about 2 h. 15 min.; descending, 1 h. 15 min. is pretty quick time.

The **Aiguille de la Floriaz**, or Floria, about 9700 feet **(Cx. T. 14)**, N.W. of the Flégère, is (possibly excepting one of the peaks of the Aigs. Rouges, a little farther to the N.) the highest point of the range of the Brévent. It is superior as a point of view to the Flégère, and the panorama from its summit is somewhat similar though inferior to the view from the Buet. This ascent affords a good introduction to more considerable ones, and is becoming popular. It is usually made from Chamonix, but it is better to *start* from the Flégère. A path at the back of the Hotel leads to the Châlet de Floriaz, about 7500 feet (refreshments and beds), which is only open in the middle of the season. The path terminates soon after the

[1] This is the elevation given on the French Official Map, but the Flégère is more nearly on a level with the Montanvert.

THE AIGUILLE VERTE AND THE AIGUILLE DU DRU, FROM ABOVE THE FLÉGÈRE.

Châlet is passed, and the way then leads over debris and snow-beds to a Col between the Aig. de la Floriaz and the Aig. de la Glière. On leaving the Col turn to the right up a rocky *arête*, and follow it, or the snow on the western side, to the top. The summit is a cone of snow. Time from Flégère to summit about 3 h. 50 min.; summit to Flégère 1 h. 45 min., moving briskly.

The Buet, 10,200 feet, can be ascended from several directions. The easiest and quickest route from Chamonix is *viâ* Argentière, the Col des Montets, and the Valley of Bérard (**Cx. T. 40**). **The road to Argentière** leads out of the N. end of Chamonix, and at **les Chables** crosses to the left bank of the Arve. At **les Praz** (2 kils.), HOTEL NATIONAL PENSION; HOTEL DU CHÂLET DES PRAZ, it divides. Take the road to the left. At **les Tines** (4 kils.), RESTAURANT ET PENSION DE LA MER DE GLACE, it commences to rise, and in 2 kils. more passes **les Iles**; at 7 kils. **Chauzalet** (Chosalets), and recrosses to the right bank; and at 8 kils. from Chamonix arrives at **Argentière**, 3963 feet, HOTEL DE LA COURONNE; HOTEL PENSION BELLEVUE. Time from Chamonix to Argentière about 65 min. riding, or 80 min. on foot. A short kil. beyond Argentière the road to le Tour and the Col de Balme goes away on the right. Our road inclines to the left, and mounts in several zigzags (which a pedestrian should cut) past the hamlet of Trélechamp to the **Col des Montets**, 4700 feet. At about 2½ kils. from Argentière there is the HOTEL DES MONTETS, but after that there is no other hotel until the HOTEL PENSION DU BUET, at the entrance of the Val Bérard. This latter hotel is *said* to be at Valloreine, but the village of that name is more than a mile farther on. The group of châlets at the entrance to the Val Bérard is called **la Poya**, 4318 feet. Walking time from Argentière to la Poya is a little under 1 hour.

The course up the **Val Bérard** is at first a little S. of W., and follows the right bank of the valley. In 40 min. it crosses to the left bank, and keeps on that side until **Pierre à Bérard**, 6332 feet, at which spot there is an erection that can hardly be called either hotel, restaurant, or refuge. It has beds, and a reputation for high charges. This place is at the head of the valley, which here opens out into a *cirque*. Mules can go so far. The stream is called **Eau de Bérard**, and is beautifully clear, with pools large enough for bathing. After passing Pierre à Bérard, the track mounts steeply, due W., for about 1000 feet, and then turns to the N., and skirts the eastern side of the Aig. de Salenton. The Buet is now seen, but a direct course is not shaped for it. The route usually taken bears round to the N.W., and mounts sometimes over solid rock or grass, but generally over debris with occasional snow-beds (incipient glacier) to a spot which overlooks the valley of the Dioza; and then turns N.E. over rocky ground (which has a strongly marked track, almost a path) to the lower and western end of the summit-ridge. Snow and glacier on the Buet have diminished of late,[1] but it is still advisable to employ a rope. The ascent of the Buet is a *walk*

[1] On Oct. 1, 1895, I walked along the whole length of the summit-ridge of the Buet *without touching snow*.

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from beginning to end. There is no climbing. Time from Pierre à Bérard to the summit about 3½ hours.

The view from the Buet of the Range of Mont Blanc is one of the very finest that can be had from *any* position. It is more comprehensive than that from the Brévent, and more picturesque than that from the Aig. de la Floriaz. The range of the Brévent occupies the middle distance, and contrasts forcibly with the snow-fields and glaciers of the Great White Mountain. In other directions the view is very extensive, and embraces many of the highest peaks of the Pennine Alps. Geneva can be seen, and the Jura beyond. The Buet was first ascended *viâ* the Val Bérard by Bonrrit, and the excursion is referred to by him in his *Nouvelle Description*, chap. xvi. The mountain had previously been ascended by M. de Lue from Sixt. See Dent's *Above the Snow-line*, chap. viii, for sunset from the Buet.

The *descent* may be made to the Hotel du Buet in 2 h. 40 min., or less. Thence to Chamonix on foot will occupy about 2 h. 15 min. Although the Ascent of the Buet is upon the Chamonix *Tarif des Courses* as an *one-day* excursion, few persons make it in one day; for with a moderate allowance for halts it occupies about 16 hours. Starting at 2 a.m., one would return at 6 p.m. This will be seen from the following table.

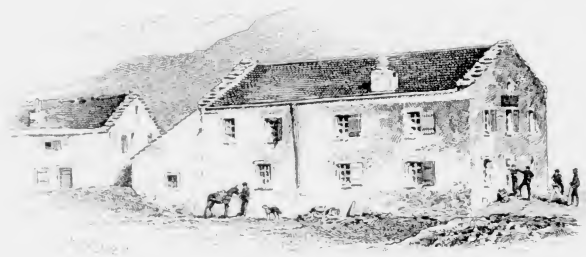
	h.	min.
Chamonix to Argentière	1	20
Argentière to Hotel du Buet		55
Hotel du Buet to Pierre à Bérard	1	50
Pierre à Bérard to summit	3	30
Summit to Hotel du Buet	2	40
Hotel du Buet to Argentière	1	
Argentière to Chamonix	1	15

Over the Col de Balme, returning by the Tête Noire (Cx. T. 35-39), is a good excursion for a pedestrian, and is preferable to going by the Tête Noire and returning by the Col de Balme. For the road to Argentière see page 107. Five or six min. after passing the village the road crosses a wooden bridge to the left bank of the Arve, and in a little more than half an hour arrives at **le Tour,** 4695 feet. The carriage-road ends here,—the rest of the way (to Trient) is mule-path. The inn on the Col de Balme can be seen from le Tour. *In bad weather* the telegraph posts give a clue to the right direction, most of the way. From le Tour to the Col takes about 1 h. 40 min. Rather more than half way up, one passes 7 cow-sheds called **Balme,** which appear to give the name to the Col. Here are the sources of the Arve. On the summit of the pass there is the HOTEL SUISSE DU COL DE BALME (7231 feet), a poor place, and dear.

The proportions of Mont Blanc, and the relative importance of the various Aiguilles are better seen from the Col de Balme than from the Brévent or the Flégère. The view on the French side is very fine. Commencing on the right there is the Buet, then the Aigs. Rouges (craggy and precipitous), the slopes of the Brévent, the whole length of the Valley of Chamonix from the village of Frasserans to the Col de Voza, the Aig. and Dôme du Goûter, Mont Blanc itself,

the Aig. Verte with its supporters les Droites and the Aig. du Dru, and on the left the Aig. du Tour. "Je restai," said Alexandre Dumas, "une heure anéanti dans la contemplation de ce tableau, sans m'apercevoir qu'il faisait quatre degrés de froid." The view to the north is less interesting. The path seen to the right leads to the Trient Glacier; the prominent block of mountains beyond it is the Pointe Ronde. Near at hand, on the left, the grassy slopes culminate in the point called the Croix de Fer, 7478 feet. It is only a few hundred feet above the Col, and can be reached by anyone.

On the first part of the *descent* on the N. side the course is N.E.



HOTEL SUISSE DU COL DE BALME.

It presently enters forest and becomes N. In less than an hour one can go from the Col to the bottom of the Valley of Trient. On arriving at the bridge of Penti, do not cross the stream. Keep on the left bank, and go over the bridge at Planet, a kil. lower down. In five min. more one strikes the carriage-road at Gillot. Thence to the Hotel on the Tête Noire (3920 feet) is 2½ kils. As people going from Martigny to Chamonix or in the contrary direction are now *compelled* to change carriages here, in the middle of the day, this is a busy place. Time from Penti less than an hour.

I recommend the purchase at this Hotel of a little pamphlet in English entitled *The Mysterious Bridge on the abyss to be seen from the Tête Noire*, published at Martigny-Bourg by Bioley. The author set out from Martigny on a hot day in August to walk over the Forclaz to the Tête Noire. "The road," he says, "which winds itself through the forest" (on the Forclaz) "is perfectly well entertained, and wide enough to allow the circulation of carriages with two horses." This was how it appeared to him after he had taken (by his own admission) at least three drinks in the course of two hours, whilst walking up. At the top of the Forclaz "that which pleased me most," he says, "was the frank and hearty reception I found there. I took my seat at the table and dined with the best possible appetite." The effect of the dinner shortly became apparent. He found that "the road passes before . . . a saw-mill in full activity and successfully conducted. At present one can see there

hundreds of telegraphic posts prepared according to a new system, put in motion simply by the water." Upon arrival at the Hotel on the Tête Noire he encountered the host, "whose cordiality is well known. . . I will conduct you," said he, "to the mysterious bridge on the abyss of the Tête Noire, but, before we go, *it is prudent that you come to take some refreshments.* I accepted with thanks his invitation and we returned to the hotel. After lunch or wath is called in this country the dinner, he brought me a solid mountain staff and invited me to follow him, and not be afraid. I assured him that I was not timorous." This was after three drinks and a couple of dinners. For the remainder of the description refer to the pamphlet. It will lighten the way back to Chamonix.

After passing the Hotel on the Tête Noire, the road bends round to S.S.W., and for somewhat more than 2 kils. passes through forest, and principally upon a shelf cut out of the face of a cliff overhanging the Eau Noire. It then crosses to the left bank of the stream, and is shortly afterwards joined by the road from Salvan, and passes a burnt out Hotel. One kil. beyond the bridge there is the Swiss Custom-house on the right; then a station for Gendarmes, and a few yards farther on the HOTEL-PENSION SUISSE, **Châtelard**,[1] good, obliging proprietor. A hundred yards farther on the road crosses to the right bank. *At the bridge there is a stone marking the Franco-Swiss frontier.* About 500 feet on the French side, on the right, there is the HOTEL DE BARBERINE, which is a post of the French Gendarmerie; and, upon the opposite side of the valley, the village (3779 feet), and **Cascade of Barberine.** The village of **Vallorcine**, Café-Restaurant, is 2 kils. from Châtelard, and the Hotel du Buet about 2 kils. more. Thence to Chamonix, see page 107. The splendid view of the Aig. Verte is the most noticeable thing on the road between the Hotel du Buet and the Col des Montets. From no other direction can the relation of the Aig. du Drn to the Verte be seen so well. The entire round over the Col de Balme, returning by the Tête Noire, occupies about 9 hours.

	h.	min.
Chamonix to Argentière	1	20
Argentière to Col de Balme	2	15
Col de Balme to Hotel on Tête Noire	1	40
Tête Noire to Argentière	2	35
Argentière to Chamonix	1	15

Servoz; Écrevisse fishing; the Gorge of the Dioza (Diosa, Diosaz). When weather is unsuitable for the higher regions, go *écrevisse fishing* at Servoz, and visit the Gorge of the Dioza. **Servoz**, 2680 feet, pop. 519; HOTEL ET PENSION DE LA DIOSAZ; HOTEL DE LA FOUGÈRE (small), was formerly upon the road from Sallanches to Chamonix, which naturally followed the flattest and easiest ground, although this made the way circuitous. The village is very agreeably situated, rather more than half a mile to the N. of the new road (*the* road between Châtelard and les Montées), close to the entrance to the Valley of the Dioza, which runs along the back of the range of the Brévent.

[1] It is to be noted that although these several places are called Châtelard, the village of that name is more than a kilometre away, on the road to Salvan.

Take the morning diligence (fare 2 francs), or go on foot to les Montées. Then walk about 1 kil. down the high road towards Châtelard, and turn off anywhere on the right to the brook that you will see at the foot of the slope below the road. Here are **Écrevisses** (cray-fish). The manner of catching them is on this wise. Before starting, ask for some strips of raw meat from the kitchen (any rubbish will do), and bring these along with you in a basket. Cut several twigs 2 to 3 feet long, cleave them at one end, and in the clefts insert bits of meat. You then poke the ends of the twigs with meat attached into slimy places or under stones, and leave them at rest for a little. Examine your rods from time to time, to see whether there is an écrevisse hanging on to the meat. If so, land it, cautiously and cunningly, and begin again. On return to Chamonix give the écrevisses to the Chef of your hotel, who will know what to do with them. When this sport is over, cross the bridge at Châtelard to Servoz, which is only a few hundred yards from the Gorge. Admittance 1 franc. Beautiful beeches, and luxurious foliage at entrance. A plank path is carried on trestles or otherwise a long way up the chasm, which affords a succession of delightful prospects at its numerous bends, and has many cool, shady nooks, where one can repose and be lulled to sleep with the music of singing-birds and the murmuring of the stream. Notice the Inscription on the walls.

About a mile N. of Servoz, on the slopes overlooking the village, there is a marshy pool called Lac de la Côte, where the summit of Mont Blanc can be seen mirrored in the water—an exquisite spot for an artist. Return from Servoz by the old road, and over the Pont Pélissier. A few minutes after the bridge, this route joins the high-way just in front of the Hotel des Montées. This park-like road is well kept up, and leads through shady woods, well-adapted for readers.

	h.	min.
Chamonix to the near end of les Houches	1	
Les Houches to les Montées		45
Bridge of Châtelard to Servoz		30
Servoz to les Montées		35
Les Montées to Chamonix	1	50

Another excursion which may be made upon days that are unfit for high levels is to **the Pavillon Bellevue** or **Col de Voza (Cx. T. 70, 71, 72)**, over to the other side; descending *viâ* Bionnassay to Bionnay, and returning by St. Gervais and le Fayet. Walk to les Houches (good beer at the little inn), and take the 'chemin direct,' which leads partly through fields and pastures, and partly through forests. Many flowers here. The **Pavillon Bellevue**, 5945 feet, is the building which you will see whilst ascending, against the sky-line, on the left. A very humble place; plain food. The view from it, looking back, extends over the whole of the Valley of Chamonix, and in the contrary direction it is equally fine. Descending towards the W. by a steep path down the valley of **Bionnassay** one soon arrives at the village of that name, and joins the path coming from the Col de Voza, 5496 feet. A mile and a half away S.E. by E. there is the small

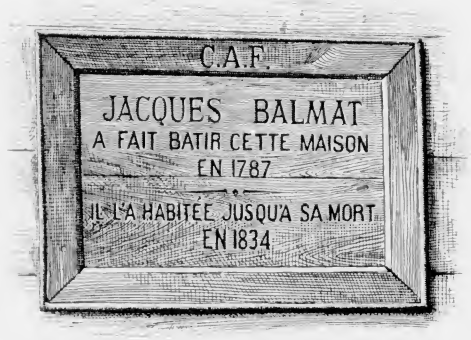
Glacier des Têtes Rousses (a local name, not given on Govt. Maps), where the flood originated which wrecked the Baths of St. Gervais in 1892. Few traces of this great disaster will be found in the valley of Bionnassay; but just below the village of **Bionnay** (3192 feet, no inn) it will be noticed that the road up the Val Montjoie is cut through a pile of boulders and sand about 20 feet high. This was brought down by the flood, and deposited there in a few minutes. At Bionnay turn to the right, for St. Gervais. After passing the hamlet les Praz, and just before entering the village, there is a road on the left leading downwards to the **Pont du Diable**, from which there is a fine view of the *upper* part of the **Gorge of Crepin**. Remount the road to **St. Gervais**; HOTEL DE MONT JOLI; HOTEL DE GENÈVE; HOTEL DU MONT BLANC; HOTEL ET PENSION DES ÉTRANGERS; besides several cafés and shops; Post and Telegraph. The village of St. Gervais occupies a pleasant position on slopes at the extreme western end of the Range of Mont Blanc, overlooking the plain of Sallanches. The *Baths* of St. Gervais are several hundred feet below, out of sight. Enquire at the village for the path to them. A little way down it, another path leads off on the left to a spot where the *middle* of the Gorge of Crepin (Torrent of Bon Nant) can be well seen. Admission 50 centimes. Returning to the original path, and continuing downwards through picturesque woods, in 10 or 12 min. you will arrive at the Hotels of the Baths. Turn to the left, pass between the Hotel buildings and cross a little bridge over the torrent to inspect the *lower* end of the Gorge; and then return along the road by the side of the torrent. About a kil. below the Hotels of the Baths there is the new **Bathing Establishment.** Admittance free. Sulphur baths 2 francs, Vapour baths 6 francs. A few hundred feet farther on, the road joins the highway at le Fayet. Return to Chamonix either on foot or by diligence.[1]

	h.	min.
Chamonix to near end of les Houches	1	
Les Houches to Pavillon Bellevue	2	
Pavillon Bellevue to Bionnay	1	5
Bionnay to St. Gervais village		40
St. Gervais village to le Fayet, *viâ* the Baths		35

The Cascard du Dard, the Glacier des Bossons, the Grotto, and the House of Jacques Balmat (Cx. T. 1, 2), can all be visited in an afternoon. Take the path to the Pierre Pointue (page 98); pass through the hamlets of les Praz Conduit, les Barats, and les Tsours (Tissours), which are all close together, and then through forest. In about 35 min. you will reach the HOTEL DU CASCADE DU DARD, a very humble place, close to the waterfall. Soon after passing the hotel, the path divides,—that on the left goes to the Pierre Pointue, and the other to the Glacier des Bossons. Cross the flat ice to the left bank, and visit **the Grotto**—a gallery excavated in the side of the glacier, for the benefit of tourists. There is a small charge for admission. From the Grotto descend by the path on the left bank of the glacier, which at this part is broken up into fantastic pinnacles. Cross the stream

[1] The Baths and Village of St. Gervais are referred to in more detail in Chapter XIV.

issuing from the glacier, and make for les Pelerins. The **house of Jacques Balmat**, an ordinary châlet with barn attached, is almost the highest one of the village, and stands apart from the rest. At present it is not inhabited. The inscription upon it was put up



TABLET ON BALMAT'S HOUSE.

by the French Alpine Club. In returning, you can either walk home through the fields, by les Favrants, les Barats, and le Praz Conduit (which will take about 25 min.), or cross the bridge of Perralotaz and go back by the high road. This is about 1 kil. longer than through the fields. At the first house on the right bank after crossing the bridge is the shop of Simond Bros., the ice-axe makers, who have generally a good assortment in stock. Prices moderate. This is the best place at Chamonix for ice-axes.

To the Pierre Pointue, returning by the Plan des Aiguilles (Cx. T. 20, 22, 28). To the Pierre Pointue will occupy 2 hs. ascending, and 1 h. descending. Less than these times is quick. The path to it forms a portion of the usual route for the ascent of Mont Blanc. See pp. 98, 112. After passing the Hotel du Cascade du Dard, there is only one other place where refreshments can be obtained on the way, the **Châlet de la Para**, 5266 feet, prices fair, which is almost exactly half way up *in time*. The path emerges from the forest soon after leaving this place, and for most of the rest of the way it is shadowless. Take umbrellas. The **Pavillon at the Pierre Pointue**, 6723 feet, is a shabby building, and is usually kept by the lessee of the Grands Mulets. Prices high. The Brévent is nearly immediately opposite, and the path to it *viâ* Bel Achat is very well seen. The view also embraces most of the Valley of Chamonix, and a considerable portion of the tumultuous part of the Glac. des Bossons. On leaving the Pavillon turn eastwards, and skirt the bases of the Aigs.

du Midi, du Plan, and de Blaitière, by what is termed the **Plan des Aiguilles.** One can go all the way round to the Montanvert, or descend on Chamonix by more than one path. Guides unnecessary in fine weather,—the way is readily perceived. It is best to start for this excursion at a reasonably early hour.

To the Pierre Pointue, Pierre à l'Echelle, and the Grands Mulets (Cx. T. 21, 108; and 2, "courses extraord."). This excursion is a continuation of the route usually taken for Mont Blanc, and *can* be

THE GRANDS MULETS.

united to the last one, but without this it will occupy a moderately long day; 4 a.m. is not too early to start. Average time from Chamonix to the Grands Mulets is about 5¼ to 5½ hs.; descending, about 3¼ hs. Anything less is quick time. For the way to the Pierre Pointue, see last paragraph. The mule-path comes to an end there, but thence to what is called the **Pierre à l'Echelle** there is a path over which any English boy ought to be able to go alone. After that, he had better have someone with him. The way from the Pierre Pointue to Pierre à l'Echelle gradually approaches the right bank of the Glac. des Bossons, and at the latter place arrives at the edge of the ice. There are not many ladders usually seen there now. It takes its name from the habit which was formerly indulged in, in

imitation of De Saussure (see pp. 38-9), of carrying a ladder about to use for crossing crevasses. The ladder, or ladders, were usually left here. From this place the rocks called the Grands Mulets can be seen, and in clear weather anyone who is accustomed to traverse glacier will find a route to them; but in *bad* weather this passage, which is scarcely a mile and a half long, is trying even to experts. There have been occasions when it has been *impossible* to the *élite* of the guides of Chamonix. See p. 55. For one-half of the distance there are no greater difficulties than such as arise from walking over ice which is fissured; but upon arrival at 'the junction'—the point of union of the eastern Glac. de Taconnaz and the Glac. des Bossons—the ice is a good deal dislocated (see Illustration on p. 42), under any circumstances will require the use of the axe, and at times requires something more. The excursion from Chamonix to the Grands Mulets ought not to be undertaken *without guides* except by persons who are accustomed to traverse glaciers under all conditions of weather.

After passing 'the junction,' the way becomes easier; but it is seldom possible to steer a *direct* course to the Grands Mulets. One is driven to the right (north-west), and then has to double back.

The Grands Mulets, 10,113 feet, as a resting place on the ascent of Mont Blanc, was discovered by the earliest explorers of the mountain. This island of rock is, doubtless, an Aiguille of the ridge which lower down is called the Montagne de la Côte. It occupies a very commanding position, and the views from it looking across the Valley of Chamonix, towards the Aig. du Midi, and, in the contrary direction, over the Glac. de Taconnaz to the Aig. du Goûter are all striking. A sunset seen from the Grands Mulets will be remembered. The building there—termed the Pavillon—is, like the other one at the Pierre Pointue, the property of the Commune of Chamonix, and the two places are generally let together for a term of years. There are beds at the Grands Mulets, and food can be had. "The Commune reserves to itself the right to fix the price of lodging, etc.,"—the tenant has no option in this matter. The following are prices fixed by the Commune.

	fr. cts.
Logement d'un Voyageur aux Grands Mulets, service et bougie compris pour une nuit	12 . .
Un déjeuner de Voyageur à la fourchette . . .	4 . .
Dîner sans vin	6 . .
Chaque repas de guide, vin compris	2 50
Provisions pour l'ascencion au Mont Blanc et autres sommités, menu habituel par tête, guide compris .	4 . .
Les mets ou provisions faisant l'objet du present tableau seront de bonne qualité et d'un volume raisonable autant qu'il sera possible de le faire à cette altitude.	

Many visitors consider these prices high, and do not like to be put two in a bed, or with several strangers in a room, when they pay 12 francs per head for *logement;* and the general opinion is that as 'a point of view' this spot is very fine, but that in point of accommodation the place is not up to the times.

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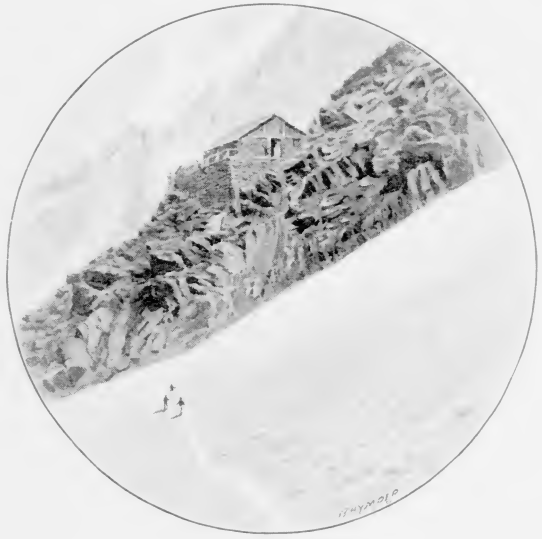

THE GRANDS MULETS.

united to the last one, but without this it will occupy a moderately long day: 4 a.m. is not too early to start. Average time from Chamonix to the Grands Mulets is about 5¼ to 5½ hrs.; descending, about 3¼ hrs. Anything less is quick time. For the way to the Pierre Pointue, see last paragraph. The mule-path comes to an end there, but thence to what is called the **Pierre à l'Echelle** there is a path over which any English boy ought to be able to go alone. After that, he had better have someone with him. The way from the Pierre Pointue to Pierre à l'Echelle gradually approaches the right bank of the Glac. des Bossons, and at the latter place arrives at the edge of the ice. There are not many ladders usually seen there now. It takes its name from the habit which was formerly indulged in, in

imitation of De Saussure (see pp. 38-9), of carrying a ladder about to use for crossing crevasses. The ladder, or ladders, were usually left here. From this place the rocks called the Grands Mulets can be seen, and in clear weather anyone who is accustomed to traverse glacier will find a route to them; but in *bad* weather this passage, which is scarcely a mile and a half long, is trying even to experts. There have been occasions when it has been *impossible* to the *élite* of the guides of Chamonix. See p. 55. For one-half of the distance there are no greater difficulties than such as arise from walking over ice which is fissured; but upon arrival at 'the junction'—the point of union of the eastern Glac. de Taconnaz and the Glac. des Bossons—the ice is a good deal dislocated (see Illustration on p. 42), under any circumstances will require the use of the axe, and at times requires something more. The excursion from Chamonix to the Grands Mulets ought not to be undertaken *without guides* except by persons who are accustomed to traverse glaciers under all conditions of weather.

After passing 'the junction,' the way becomes easier; but it is seldom possible to steer a *direct* course to the Grands Mulets. One is driven to the right (north-west), and then has to double back.

The Grands Mulets, 10,113 feet, as a resting place on the ascent of Mont Blanc, was discovered by the earliest explorers of the mountain. This island of rock is, doubtless, an Aiguille of the ridge which lower down is called the Montagne de la Côte. It occupies a very commanding position, and the views from it looking across the Valley of Chamonix, towards the Aig. du Midi, and, in the contrary direction, over the Glac. de Taconnaz to the Aig. du Goûter are all striking. A sunset seen from the Grands Mulets will be remembered. The building there—termed the Pavillon—is, like the other one at the Pierre Pointue, the property of the Commune of Chamonix, and the two places are generally let together for a term of years. There are beds at the Grands Mulets, and food can be had. "The Commune reserves to itself the right to fix the price of lodging, etc.," the tenant has no option in this matter. The following are prices fixed by the Commune.

	fr. cts.
Logement d'un Voyageur aux Grands Mulets, service et bougie compris pour une nuit	12 .
Un déjeuner de Voyageur à la fourchette	4 .
Dîner sans vin	6 . .
Chaque repas de guide, vin compris	2 50
Provisions pour l'ascension au Mont Blanc et autres sommités, menu habituel par tête, guide compris .	4 . .
Les mets ou provisions faisant l'objet du présent tableau seront de bonne qualité et d'un volume raisonable autant qu'il sera possible de le faire à cette altitude.	

Many visitors consider these prices high, and do not like to be put two in a bed, or with several strangers in a room, when they pay 12 francs per head for *logement*; and the general opinion is that as 'a point of view' this spot is very fine, but that in point of accommodation the place is not up to the times.

	h.	min.
Chamonix to the Pierre Pointue	2	
Pierre Pointue to Pierre à l'Echelle		50
Pierre à l'Echelle to Grands Mulets	2	25
Grands Mulets to Pierre à l'Echelle	1	35
Pierre à l'Echelle to Pierre Pointue		25
Pierre Pointue to Chamonix	1	

Ascent of the Montagne de la Côte (Cx. T. 101), returning by the Glacier des Bossons. This excursion *can* be combined with the last one, but it will add several hours to the day's work. It was *viâ* the Montagne de la Côte that most of the early attempts on Mont Blanc were made, and it was this way Balmat went on the first ascent, and De Saussure after him. See pp. 14, 15, 17, 19, 21, 23, 30, 31, 35, 41. It takes about 5 hs. from Chamonix to the top, and 3½ to 4 hs. coming back by 'the junction,' Pierre à l'Echelle, and Pierre Pointue. Go down the high road so far as the village of les Bossons, and follow the path leading to the Glac. des Bossons. This presently divides. Take that to the right, which leads into the vallon of the Taconnaz Glacier, and mounts an old moraine on its right bank. When the moraine terminates, the path at first ascends the slopes on the right bank (or eastern side of the Montagne de la Côte), and then gets near the *arête* of the ridge, and Chamonix can be seen. The way is an old one, and it occasionally dies out, though in other places it is a good path. It is presumably that which was followed by De Saussure.

At the very top of the Montagne there is a cairn, and alongside the rock on which this is erected there are the remains of a regularly built though unroofed hut. About 200 feet below, there are some very large boulders, which appear to have come from the Rochers Rouges. One of them measures 10 mètres high, by 9 by 14 mètres. From the summit one sees the Grands Mulets, and the way up Mont Blanc as far as the edge of the Grand Plateau. The Aig. du Midi and the Dôme du Goûter both look very fine from this position, and the view over the valley of Chamonix is as good as, or better than that from the Grands Mulets.

THE OLD MONTANVERT, IN 1895.

THE COL DE TALÈFRE.

CHAPTER XI.

EXCURSIONS FROM THE MONTANVERT.

TO THE JARDIN—BY THE COL DU GÉANT TO COURMAYEUR—THE *SÉRACS* OF THE GLACIER DU GÉANT—ASCENT OF THE AIGUILLE VERTE—AIGUILLE DU DRU—THE GRAND AND PETIT DRU—PIC SANS NOM—AIGUILLE DU MOINE—LES DROITES—LES COURTES—AIGUILLE AND COL DE TRIOLET—COL DE TALÈFRE—AIGUILLE DE TALÈFRE—COL DE PIERRE JOSEPH—COL DE LESCHAUX—COL DES HIRONDELLES—COL DES GRANDES JORASSES—MONT MALLET—PIC DU TACUL—AIGUILLE DU GÉANT—AIGUILLE DU MIDI—AIGUILLE DU PLAN—AIGUILLE DE BLAITIÈRE—AIGUILLES DES CHARMOZ—AIGUILLE DE GRÉPON—THE LITTLE CHARMOZ—AIGUILLE AND COL DES GRANDS MONTETS.

In the middle of the season the Montanvert Hotel is sometimes full, and overflowing, and tourists cannot rely upon being taken in; but information as to the state of affairs can readily be obtained before starting from Chamonix, as there is telegraphic communication. The excursions from the Montanvert—for which it is properly the starting-point—embrace all those that can be made in the basins of the Mer de Glace, and its tributaries the Glaciers de Talèfre, du Géant, and de Leschaux. As these basins extend over nearly one-third of the total length of the Range of Mont Blanc, the excursions that can be made are numerous, and they include difficult as well as easy ones. Whilst *mentioning* the majority of those which can be made, I do not enter into detail respecting the more difficult ones, and refer those who

	h.	min.
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THE OLD MONTANVERT, IN 1795.

THE COL DE TALÈFRE.

CHAPTER XI.

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TO THE JARDIN—BY THE COL DU GÉANT TO COURMAYEUR—THE *SÉRACS* OF THE GLACIER DU GÉANT—ASCENT OF THE AIGUILLE VERTE—AIGUILLE DU DRU—THE GRAND AND PETIT DRU—PIC SANS NOM—AIGUILLE DU MOINE—LES DROITES—LES COURTES—AIGUILLE AND COL DE TRIOLET—COL DE TALÈFRE—AIGUILLE DE TALÈFRE—COL DE PIERRE JOSEPH—COL DE LESCHAUX—COL DES HIRONDELLES—COL DES GRANDES JORASSES—MONT MALLET—PIC DU TACUL—AIGUILLE DU GÉANT—AIGUILLE DU MIDI—AIGUILLE DU PLAN—AIGUILLE DE BLAITIÈRE—AIGUILLES DES CHARMOZ—AIGUILLE DE GRÉPON—THE LITTLE CHARMOZ—AIGUILLE AND COL DES GRANDS MONTETS.

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may desire fuller information to the *Guide de la Chaine du Mont Blanc à l'usage des Ascensionnistes*, par Louis Kurz, Neuchatel, 1892, which can be had of Messrs. Georg, Corraterie 10, Geneva, and elsewhere.

The most popular excursion from the Montanvert is to the **Jardin (Cx. T. 23, 24)**, a rocky island in the middle of the basin of the Glac. de Talèfre. The upper end of it is 9833 feet above the sea, and about 700 feet above its lower extremity. It acquired this name earlier than the time of De Saussure, who says of the way to it from the Montanvert that at first it is easy enough, although high above the glacier, but 'in a quarter of a league' it is lost upon a steep slope.

"The first two times I passed that way, one could only get foothold on some little inequalities or cavities in the rock, and if one had slipped, would have tumbled on to the glacier, deep down below. But in 1778, as soon as I got to Chamonix, I sent off two men, who mined the rock while we went to the Buet, and made this place, if not very convenient, at least free from danger. Those who visit the bottom of the glacier after us, will be under obligations to us for having facilitated the way. There are two similar bits close together, called *les Ponts*. After having passed them, one descends to the bank of the glacier, and follows the *moraine* for some time. One passes there close to a spring . . . its water is admirably cool and clear." *Voyages*, § 628.

He then goes on to describe how he traversed the medial moraines of the Mer de Glace, and clambered up the rocks of **the Couvercle** to turn the tumultuous ice-fall of the Glac. de Talèfre, and arrived at the brink of the comparatively flat glacier which lies between the Couvercle and the Jardin, which is, he says,

"almost circular in shape, slightly raised above the level of the glacier. The middle of July is only the beginning of spring in these high regions, but at the end of August it is covered with a fine turf, and a large variety of pretty Alpine flowers. And so it is called **le Courtil**, a word which, in Savoyard as well as in old French, means **Jardin** (garden). It is enclosed like a garden, for the glacier has deposited around it a ridge of stones which form a fence."

These passages shew that in the time of De Saussure the route followed the exact one taken at present, and it is evident that the way had been known some length of time before 1778.

The Jardin is right in the heart of the ice-world, and is almost encircled by snowy peaks. The route to it is marked on the folding map. Only a mile away to the W. there is the Aig. du Moine (11,214 ft.), then, turning to the right, the Aig. Verte (13,540 ft.), les Droites (13,222 ft.), les Courtes (12,648 ft.), Aig. de Triolet (12,727 ft.), and the Aig. de Talefre (12,287 ft.). Part of the Italian side of Mont Blanc is seen, and it will be noticed that it is much steeper than the French side. M. Venance Payot, in his *Végétation de la région des neiges ou Florule de la Vallée de la Mer de Glace*, Lyons, 1868, enumerates 109 species of plants which have been obtained on the Jardin. The excursion can be comfortably made in a short day, and an early start is not necessary. Time going, about $3\frac{3}{4}$ hours; returning, 3 hours.

One of the finest excursions that can be made from the Montanvert is the passage of the **Col du Géant** to Courmayeur **(Cx. T. 14, courses ext.)**. Some persons go only to the summit of the Col and return the same way **(Cx. T. 15, courses ext.)**. Either of these excursions requires an entire day. Or one can go from the Montanvert to the foot of the Séracs of the Glacier du Géant **(Cx. T. 25)** and back in an afternoon.

The Col du Géant is the oldest pass across the main chain of Mont Blanc, and it is one of the very few that are of the least practical utility. In a communication to the *Alpine Journal* for May, 1878, Mons. Charles Durier drew attention to a letter which was published in the *Journal de Genève* for Sept. 15, 1787, from a M. Henri-Albert Gosse; who stated that this pass (which does not appear, however, at that time to have been known as the Col du Géant, see p. 37) was crossed on June 28, 1787, by Mons. Exchaquet (Directeur des Fonderies du Haut-Faussigny), with the guides Marie Contet (Couttet) and Jean-Michel Tournier of Chamonix. They left le Prieuré at 2.15 a.m., and arrived at Courmayeur at 8 p.m. It seems pretty certain that the pass was known some time earlier, but the date of its discovery is unknown. It can hardly have been made without a number of preliminary explorations, and failures. It is not an obvious pass when regarded from Courmayeur, and the summit cannot be seen either from Chamonix or from the Montanvert. It was crossed on Jan. 27, 1882, by the late Mr. C. D. Cunningham, with Léon Simond, Ambroise Bossonney, and Ed. Cupelin, in 12 hours, from the Mont Fréty to the Montanvert. This was said to have been the first winter passage.

Starting from the Montanvert, the way for the Col du Géant is the same as that for the Jardin for two-thirds of the distance to the Couvercle. It then approaches the base of the Tacul, and keeps near the right bank of the Glac. du Géant, as the ice there is entirely free from difficulty. Years ago, it was customary to make one's way from this point past the ice-fall of the Glac. du Géant either by the lower rocks of the Aig. Noire (see p. 37), or by the ice on that side (the right bank). But latterly it has been the habit of guides to conduct their Messieurs across the glacier to the left bank, and to find a passage through the *séracs* near the Petit Rognon. Both of these tracks are laid down on the folding map. This ice-fall is

"one of the grandest ice cascades in the Alps. At the summit it is broken into transverse chasms of enormous width and depth; the ridges between these break across again, and form those castellated masses to which the name of *séracs* has been applied. In descending the cascade the ice is crushed and riven; ruined towers, which have tumbled from the summit, cumber the slope, and smooth vertical precipices of ice rise in succession out of the ruins. At the base of the fall the broken masses are again squeezed together, but the confusion is still great, and the glacier is here tossed into billowy shapes." *Tyndall.*

When above the ice-fall, make for the left hand of the rocks called la Vierge, and thence steer a direct course to **the Col** (11,030 feet). The **Cabane** there is a few feet down on the southern side, and commands a magnificent view over Italy. The descent to Courmayeur is effected by the rocks immediately underneath the Cabane (over

which there is a strong track) to the Mont Fréty Hotel, where a mule-path commences.

Under competent guidance, the passage of the Col du Géant is a simple matter, *in fine weather;* but it is not advisable to neglect the use of the rope on this pass (see p. 39), or for persons without stamina to go ill-clad (pp. 57-8); and upon the Courmayeur side, although there is no real difficulty, the slopes must be treated with respect (pp. 52, 60). On so ordinary an excursion as that to the ice-fall of the Glac. du Géant it is possible to incur danger by approaching too closely underneath the *séracs*. These ice-towers fall frequently.[1] The length of time which is taken in crossing the Col du Géant varies considerably. Sometimes several hours are occupied in passing the ice-fall. Under ordinary circumstances reckon 7 to 7½ hours from the Montanvert to the summit, and 5 to 6 hours returning the same way. Anything under 3 hs. is good time in descending from the summit to Courmayeur. Start early.

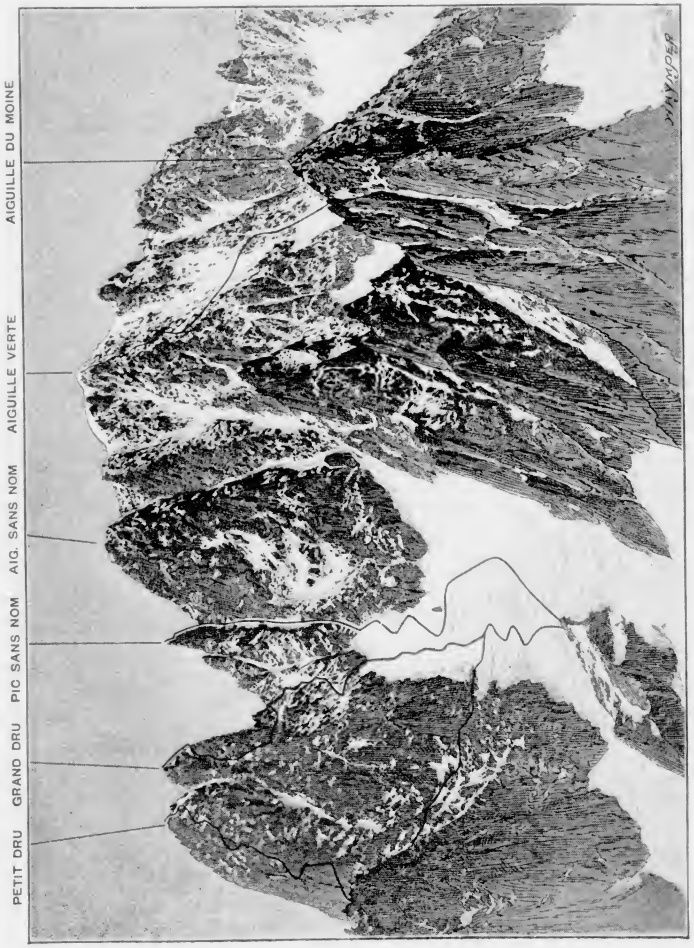
After the Jardin and the Col du Géant, the Ascents of the various Aiguilles immediately opposite have perhaps the greatest attractions for visitors at the Montanvert.

Ascent of the Aiguille Verte, 13,540 feet **(Cx. T. 32, courses ext.).** This Aiguille is the culminating point of the block of mountains between the Mer de Glace and the Glac. d'Argentière. Intelligence of the first ascent, made by myself on June 29, 1865, with Christian Almer of Grindelwald and Franz Biener of Zermatt was received at Chamonix with incredulity. (See *Scrambles amongst the Alps,* chap. xviii.)

The original route for the ascent of the Aig. Verte is the ordinary one for the Jardin so far as the Couvercle. Thence proceed directly towards the base of a large snow couloir that leads from the Glac. de Talèfre right up to the crest of the ridge connecting the summit of the Verte with the mountain called les Droites. The first ascent was made by a little snow couloir to the right (East) of the great one. At the top of the small couloir we crossed over to the large one, and ascended in it so long as there was *snow;* and when ice replaced snow turned to the rocks on the left (West), and completed the ascent by the ridge descending southwards (ridge of the Moine), by snow. The ascent from the Couvercle to the Summit occupied 7 hs. and the descent from the Summit *to Chamonix* occupied 9¼ hs., including halts. The track is laid down on the folding map, and the upper portion of it is also shewn upon the Illustration upon p. 121.

On July 5, 1865, Messrs. T. S. Kennedy, C. Hudson, and Hodgkinson, with the guides Michel Croz, M. A. Ducroz of Chamonix, and Peter Perrn of Zermatt, endeavoured to improve upon the original route, by avoiding the couloirs, and by ascending mainly by the rocks of the ridge of the Moine. They started from the Couvercle, and occupied 19¼ hours (halts included) in going to the summit and back to the Couvercle.

1 "A peal above us brought us to a stand. Crash! crash! crash! nearer and nearer, the sound becoming more continuous and confused, as the descending masses broke into smaller blocks. Onward they came! boulders half a ton or more in weight, leaping down with a kind of maniacal fury, as if their sole mission was to crush the *séracs* to powder. Some of them on striking the ice rebounded like elastic balls, described parabolas through the air, again madly smote the ice, and scattered its dust-like clouds in the atmosphere. Some blocks were carried past us within a few yards where we stood. . . My companion held his breath for a time, and then exclaimed 'C'est terrible! il faut retourner.'" *Tyndall.*



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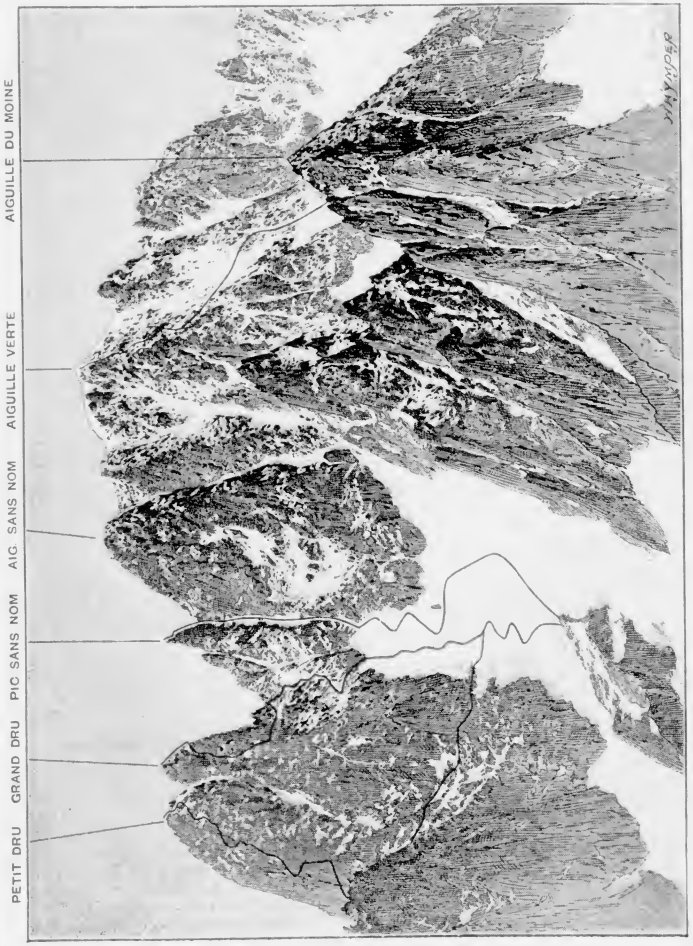


THE AIGUILLE VERTE, PIC SANS NOM, AND AIGUILLE DU DRU.

A number of attempts have been made since then to ascend the Verte by other routes. On July 31, 1876, Messrs. Cordier, Maund and Middlemore, with J. Jaun, J. Anderegg, and A. Maurer succeeded *viâ* the Glac. d'Argentière. In going from the châlets of Lognan to the summit 14 hours were occupied, and 6¾ (halts incl.) in descending to the Jardin. See *Alpine Journal*, vol. viii, pp. 289-296. On July 29, 1881, the late Mr. Mummery with Alex. Burgener ascended *viâ* the Glac. de la Charpoua, and thence by the large couloir which is seen in the Illustration on p. 121, leading downwards from, and slightly to the left of the summit; and at its upper part, where the couloir divides, bore to the left, completing the ascent by the *arête* of the ridge leading towards the West (ridge of the Dru). The descent was effected to the Couvercle. Nearly 21 hours were occupied from the Montanvert to the summit and back to the Montanvert (halts incl.). See *My Climbs in the Alps and Caucasus*, by A. F. Mummery.

From the times that were occupied, it would not appear that there is any advantage in following these routes, and tourists are warned against them. That by the Charpoua Glacier "is open to the objection that almost at every step the texture of one's skull is likely to be tested by the impact of a falling stone." *Mummery*. Of the route by the Argentière Glac. it is said "that without the combination of good weather, good guides, and a good state of snow, it would be madness to attempt it." *Maund*.

I was informed at the Montanvert, at the close of the season, that about thirty ascents of the Aig. Verte were made in 1895, all by the original route. This, however, must always be liable to some variation, and it is probable that exactly the same line is never taken on any two successive occasions.

The Aiguille du Dru is the most prominent of the Aiguilles seen from the Montanvert. It has two summits, of which the eastern one is the higher. Both can be seen from N. or S., but from the Montanvert Hotel the lower one is alone visible. The highest point, the true summit of the Dru, is now sometimes called 'the Grand Dru,' or 'pointe Est,' or 'sommet oriental.' The lower summit is termed 'the Petit Dru,' 'sommet occidental,' 'pointe Charlet.'

The first ascent of the **Aiguille du Dru**, 12,516 feet (**Cx. T. 49, courses ext.**), was made in 1878 by Messrs. Dent and Hartley, with Alex. Burgener and K. Maurer, who started on Sept. 11, passed two nights on the *rognon* of the Charpoua Glac., and returned to the Montanvert at 9 a.m. on the 13th. See *Above the Snow-line*, by C. T. Dent. The first ascent of **the lower peak** (**Cx. T. 48, courses ext.**) was made by three Chamoniards (Charlet, Folliguet, and Payot) on Aug. 29, 1879. This lower peak has not been measured. The difference in elevation of the two is variously estimated at 80 to 120 feet. The ascent of the Grand Dru has been made from the Montanvert within 24 hours, but it commonly extends over two days. The routes for the two peaks become distinct from each other soon after leaving the *rognon* of the Charpoua Glac. Both are given upon the Illustration on p. 121. It is possible to pass from the higher to the lower peak, or *vice versa*, and consequently to ascend by the one route and to descend by the other.

The **Pic Sans Nom** (not included in the Cx. T.) is a small Aiguille on the ridge of the Dru, to the E. of the Grand Dru. The route for this is the same as for the ascent of either Dru so far as the top of the Charpoua *rognon* (9324 feet), after that it becomes distinct. See track on Illustration on p. 121. The first ascent was made by Messrs. Carr, Morse, and Wicks, on July 28, 1890, who bivouacked on the lower part of the Charpoua *rognon*, occupied 11 hs. thence to the summit, and 8¼ hs. from the summit to the Montanvert. The height of this Aiguille has not been determined. Mr. Wicks considers that it is 70 to 100 feet more than the Grand Dru. The summit can be seen from the Montanvert Hotel. See *Alpine Journal*, vol. xv, p. 338.

The name **Aiguille Sans Nom** has been absurdly used in late years to designate a cliff on the ridge of the Dru. See Illustrations upon pp. 106, 121.

The ascent of **the Aiguille du Moine**, 11,214 feet **(Cx. T. 46, courses ext.)**. This Aiguille is situated at the southern end of the southern ridge of the Verte. Its ascent has been made from several directions, but the S. side (shewn on the right of the Illustration on p. 121) is generally preferred. Time from Montanvert and back about 9 hours.

Les Droites, 13,222 feet, and **les Courtes**, 12,648 feet, after the Aig. Verte, the two highest points of the ridge separating the Glacs. of Talèfre and Argentière, have both been ascended, and might be made the subject of excursions if they were worth the trouble. They are not on the List.[1] The **Aiguille de Triolet**, 12,727 feet, and the **Col de Triolet (Cx. T. 14, 18, courses ext.)** may very well be let alone. The former is inferior as a point of view to others which can be gained more easily (such as the Aig. du Moine), and the Col is useless as a Pass. This is not the case with the

Col de Talèfre, about 11,600 feet, which is one of the few passes across the main range of Mont Blanc that are of the least practical utility, or which can compete in time with the Col du Géant. Upon the first passage of this Col on July 3, 1865, we took 13 hs. from the Montanvert to Courmayeur, including halts, or less than 10 hs. going time. See *Scrambles amongst the Alps*, chap. xix. The track is laid down on the folding map.

On leaving the Couvercle, make for the N. end of the Jardin; and, after passing it, steer a direct course to a bent snow couloir situated at the head of the Glac. de Talèfre. See Illustration upon p. 117. Time on the first passage from the Montanvert to the summit of the pass was 4 h. 35 min., including halts. The descent upon the Italian side leads down steep but firm rocks, well broken up, in about 40 min. to the head of the Glac. de Triolet. Make your way to the *right* bank of the glacier, and upon getting into the Val Ferret cross the Doire torrent by the bridge at Gruetta. This excursion is upon the **Courmayeur Tarif des Courses**, but is not upon the Chamonix one.

Continuing the circuit of the basin of the Talèfre, we finally come to the **Aig. du Talèfre**, 12,287 feet, which has been ascended from the basin of the Leschaux (Léchaud) Glacier, by the Glac. de Pierre Joseph.

The head of the basin of the Leschaux Glacier is surrounded by mountains of high average elevation, the finest individual bits being the imposing wall of the Grandes Jorasses, which is one of the grandest things of its kind in the Alps, and the steep corner with the Glac. du Mont Mallet. Several passes lead out of this basin to the Italian side, but none of them are adapted to novices. Commencing at the eastern corner, there is the **Col de Pierre Joseph (Cx. T. 22, 23, courses ext.)**, which goes over the top of the Aig. de l'Eboulement, 11,836 feet, and descends upon the Glac. de Triolet. Of this pass, its discoverer, Mr. Heathcote, says, "I may perhaps be permitted to add . . . it is one that can never become popular." Next there is the **Col de Leschaux**, 11,280 feet, between the Aigs. de l'Eboulement and Leschaux (at the foot of the latter), which also descends upon the Glac. de

[1] The basin of the Glac. de Talèfre is considered good hunting-ground for *crystals*, and the slopes of les Courtes have at times yielded large quantities. Victor Tissay, a guide, told De Saussure in 1784 that he had collected 300 lbs. weight there in three hours!

Triolet; then the **Col des Hirondelles**, 11,411 feet **(Cx. T. 42, courses ext.)**, between the Grandes and Petites Jorasses, descending upon the Freboutzie Glacier. This pass acquired its name from the following circumstance.

"As we began to climb the snow-slopes we observed at a little distance ahead certain mysterious objects arranged with curious symmetry in a circle upon the glacier. Some twenty black spots lay absolutely motionless before us; and as we approached we became aware of their nature, and not, as I will venture to add, without a certain feeling of sadness. In fact, we had before us a proof of the terrible power with which tempests sometimes rage in these upper regions. The twenty objects were corpses—not human corpses, which, indeed, would in some sense have been less surprising. . . The poor little bodies which lay before us were the mortal remains of swallows. How it came to pass that the little company had been struck down so suddenly as their position seemed to indicate gave matter for reflection. Ten minutes' flight with those strong wings would have brought them to the shelter of the Chamonix forests, or have taken them across the mountain wall to the congenial climate of Italy. Whether the birds had gathered together for warmth, or been stupefied so suddenly by the blasts as to be slain at once in a body, there they were, united in death, and looking, I confess, strangely pathetic in the midst of the snowy wilderness." Mr. Leslie Stephen, in the *Alpine Journal*, vol. vi, p. 357.

A fourth pass, into this basin, the **Col des Grandes Jorasses**, between the Grandes Jorasses and Mont Mallet, was effected by Mr. Middlemore in 1874, and is the loftiest of all, but its elevation has not been determined.

The peaks in the block of mountains between the basins of the Glacs. de Leschaux and du Géant have all been ascended. **Mont Mallet**,[1] 13,084 feet, and the **Pic du Tacul**, 11,280 feet **(Cx. T. 47, courses ext.)**, are excursions from the Montanvert; but the **Aiguille du Géant**, 13,156 feet **(Cx. T. 45, courses ext.)**, which is the most appetizing of the group, is best taken from Courmayeur.

The principal excursions in the basin of the Glac. du Géant (beyond the visit to the ice-fall, and the Col) are the ascents of the **Aiguille du Midi**, 12,608 feet **(Cx. T. 36, courses ext.)**, and the **Aiguille du Plan**. For the former see p. 46. The ascent has become a common excursion, and presents little difficulty, though from the side of the Grands Mulets the Aiguille appears quite inaccessible. The ascent of the Aig. du Plan can be made in a day of moderate length.[2]

[1] This peak is situated at the head of the Glac. du Mont Mallet, E.N.E. of the Aig. du Géant, and distant from it about one kilomètre. It was first ascended by Messrs. Leslie Stephen, Wallroth, and Loppé, with the guides Melchior Anderegg, Alex. Tournier, and ? Cachat, on Sept. 4, 1871. The ascent was made by the Glac. du Mont Mallet, and, near the summit, by rocks. "The ridge on which we stood was interrupted by a huge rock 'literally overhanging,' viciously smooth, and about fifteen feet in height. Melchior paid it the unusual respect of taking off his coat. Then he somehow fastened himself to the opposing rock, and, helped by a shove from Cachat's axe, executed a singular caper in mid-air, which placed him in the right line of ascent; and finally by a dexterous wriggle, reached the summit. . . The point of view is one of singular merit, as giving perhaps the most complete panorama of all the mighty ice-streams which combine to form the Mer de Glace." Mr. Leslie Stephen in the *Alpine Journal*, vol. v, p. 303. This excursion is not mentioned in the *Tarif des Courses*.

[2] The Aig. du Plan was first ascended in July, 1871, by Mr. James Eccles with the guides Michel and Alphonse Payot, who bivouacked "on the Glac. du Géant near the Petit Rognon, and next morning started about 3 a.m. We kept as much as possible along the spur of which the Petit Rognon is the extremity, and, after passing the second ice-fall of the lateral glacier which descends from the Aig. du Plan, arrived at a moderately steep snow-slope which led to a curiously curved snow *arête*, at the further end of which appeared our Aiguille. On arriving at its base, we passed over to the Chamonix side, and after five or ten minutes' easy climbing arrived at the summit a little after 6 a.m."

The Aiguilles in the vicinity of the Montanvert are not, for the most part, suitable for beginners in mountaineering. The **Blaitière**, 11,591 feet **(Cx. T. 43, courses ext.)**, was ascended in 1874; the **Charmoz**, 11,293 feet **(Cx. T. 44, courses ext.)**, in 1880; and the **Grépon** in the same year. Amongst minor excursions which are frequently made from the Montanvert may be mentioned the ascent of **the little Charmoz**, which will occupy about 3 hs. going up and 2 hs. coming down; and the **Aiguille des Grands Montets**, 10,850 feet, a small peak (not marked on my map) to the E. of the Aig. du Bochard, which can be got at *viâ* the Glac. du Nant Blanc, or from the Glac. de Lognan, or from that of Argentière. The ascent of this Aiguille can be combined with the passage of the **Col des Grands Montets (Cx. T. 28, 29, 30, courses ext.)** from the Montanvert to Lognan, returning by a path *viâ* the Ch. de la Pendant and the Chapeau. The round can be made comfortably in a short day.

LESLIE STEPHEN.

CHAPTER XII.

EXCURSIONS FROM LOGNAN.

CHAMONIX TO LOGNAN—GLACIER D'ARGENTIÈRE—COL DOLENT—COL D'ARGENTIÈRE—ASCENT OF LA TOUR NOIRE—COL DE LA TOUR NOIRE—COL DU CHARDONNET—FENÊTRE DE SALEINOZ—COL DU TOUR—FENÊTRE DU TOUR—AIGUILLE DU TOUR—ASCENT OF THE AIGUILLE D'ARGENTIÈRE—AIGUILLE DU CHARDONNET.

THE excursions from Lognan embrace those which can be made within or leading out of the basin of the Glacier d'Argentière. This glacier, it will be seen from the Map, is one of the most considerable in the Range. The large area that it covers will not be suspected by those who view it from the Village of Argentière, or indeed from Lognan: as from those places only a portion of its lower course is seen.

To get to Lognan from Chamonix, go to Chauzalet, 3829 feet (see p. 107), and turn to the right, through the little group of châlets. The path soon takes to the lateral moraine on the left bank of the Argentière Glacier, and continues near the ice for the best part of an hour. It then bears to the right (south), and afterwards resumes nearly its original direction, and mounts directly towards the Hotel, which can be seen a considerable distance away. Time from Chauzalet 2 hs.[1] One can also get to Lognan from the Village of Argentière **(Cx. T. 93-96)**, or go there across country from the Montanvert, *viâ* the Chapeau and the Châlets of la Pendant, by a path all the way. The HOTEL, 6293 feet (poor place, prices rather high), has replaced the old châlets which were formerly used on excursions in this basin.

The Glacier d'Argentière is nearly 7 miles long. Its lower 2 miles descend over a steep bed, and the ice there is so fissured as to be practically impassable. The uppermost 4 miles, however, are unusually flat, and afford an agreeable promenade, which may be taken at any hour of the day, amid scenery of the grandest character. The intermediate mile rises rather steeply, but any one can traverse it, and get to the upper plateau, *if led by a competent guide*. The *path* extends some distance above Lognan, and after its termination the route follows the left bank of the glacier. The whole of the upper basin comes into view when opposite to the Aig. du Chardonnet, and thence it is plain sailing up to the foot of the cliffs at the farthest extremity. *A rope should be used*, though for the most part the crevasses are visible and narrow.

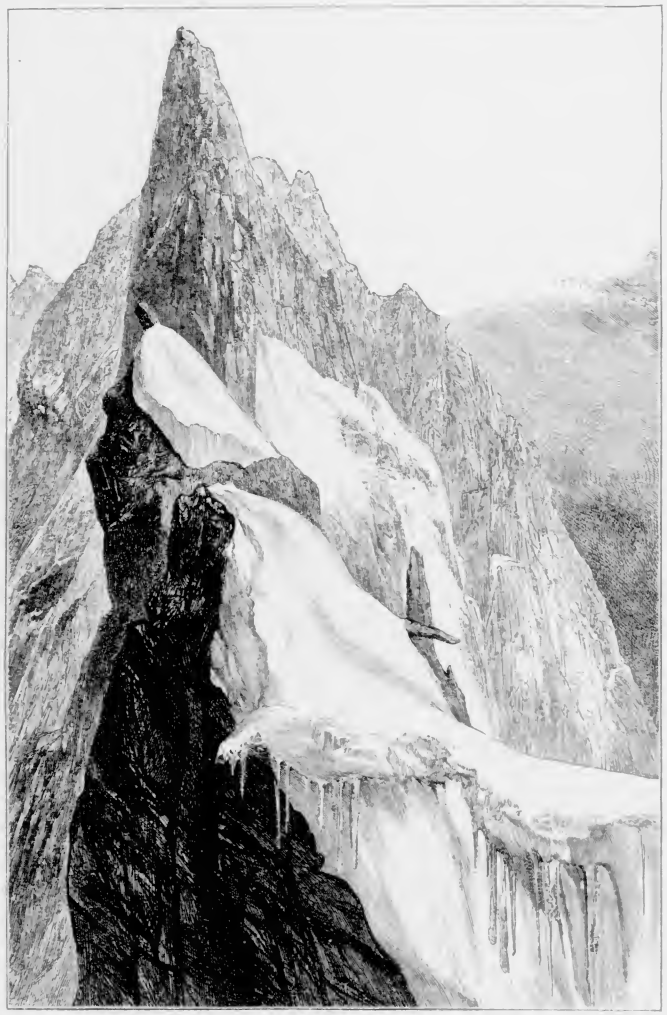
The bottom of this large plateau (which is considerably more extensive than the Grand Plateau on Mont Blanc) is flat and smooth enough for a cyclist; but the slopes on each side rise steeply, particularly those of the Verte, les Droites and les Courtes, and are encrusted with glaciers that send many an avalanche thundering down. Keep at least several hundred feet away from the debris which will be seen at the foot of these slopes. (See page 60 for the fate of the Abbé Chifflet.) At the extreme head of the Glac. d'Argentière, the cliffs extending from the Aig. de Triolet to Mont Dolent are too precipitous to permit the lodgment of snow in any quantity; but there is one large gully which will attract attention by its size and from its leading up to the lowest point on the ridge, that, apparently, is filled with snow. This is the Col Dolent. Its summit is on the frontier, and on the other side there is the Glac. du Mont Dolent (or Pré de Bar). In making a passage through this gap on June 26, 1865, we[1] were animated by a hope that we might find a pass which would compete with the Col du Géant; but, although we went through from Courmayeur to Chamonix in a day, at the end of the day we felt there was not much likelihood of the Col Dolent superseding the Col du Géant. Setting out from Courmayeur at 20 min. to 1 in the morning, at 4.30 a.m. we passed the châlets of Pré de Bar, and at a quarter past 8 were at the head of the glacier of the same name, and at the foot of the Col.

[1] This path has been accidentally omitted on the folding Map.

'It was the beau-ideal of a pass. There was a gap in the mountains, with a big peak on each side (Mont Dolent and the Aiguille de Triolet). A narrow thread of snow led up to the lowest point between them, and the blue sky beyond said, Directly you arrive here you will begin to go down. We addressed ourselves to our task, and at 10.15 a.m. arrived at the top of the pass. Had things gone as they ought, within six hours more we should have been at Chamonix. Upon the other side we knew that there was a couloir in correspondence with that up which we had just come. If it had been filled with snow all would have been well. It turned out to be filled with ice. Croz, who led, passed over to the other side, and reported that we should get down somehow; but I knew from the sound of his axe how the somehow would be.

"Croz was tied up with our good Manilla rope, and the whole 200 feet were paid out gradually by Almer and Biener before he ceased working. After two hours' incessant toil, he was able to anchor himself to the rock on his right. He then untied himself, the rope was drawn in, Biener was attached to the end and went down to join his comrade. There was then room enough for me to stand by the side of Almer, and I got my first view of the other side. For the first time in my life I looked down a slope more than a thousand feet long, set at an angle of about 50°, which was a sheet of ice from top to bottom. It was unbroken by rock or crag, and anything thrown down it sped away unarrested until the level of the Glacier d'Argentière was reached. . . I descended the icy staircase and joined the others, and then we three drew in the rope tenderly as Almer came down. The process was repeated; Croz again going to the front, and availing himself very skilfully of the rocks which projected from the cliff on our right. Our 200 feet of rope again came to an end, and we again descended one by one. From this point we were able to clamber down by the rocks alone for about 300 feet. They then became sheer cliff, and we stopped for dinner, about 2.30 p.m., at the last place upon which we could sit. Four hours' incessant work had brought us rather more than halfway down the gully. We were now approaching, although we were still high above, the schrunds at its base, and the guides made out, in some way unknown to me, that Nature had perversely placed the only snow-bridge across the topmost one towards the centre of the gully. It was decided to cut diagonally across the gully to the point where the snow-bridge was supposed to be.

[1] Michel Croz of Chamonix, Christian Almer of Grindelwald, Franz Biener of Zermatt, and myself.



THE SUMMIT OF THE COL DOLENT.

Almer and Biener undertook the work, leaving Croz and myself firmly planted on the rocks to pay out the rope to them as they advanced.

"Almer and Biener got to the end of their tether; the rope no longer assured their safety, and they stopped work as we advanced and coiled it up. Shortly afterwards they struck a streak of snow that proved to be just above the bridge of which they were in search. The slope steepened, and for thirty feet or so we descended face to the wall, making steps by kicking with the toes, and thrusting the arms well into the holes above, just as if they had been rounds in a ladder. At this time we were crossing the uppermost of the schrunds. Needless to say that the snow was of an admirable quality; this performance would otherwise have been impossible. It was soon over, and we then found

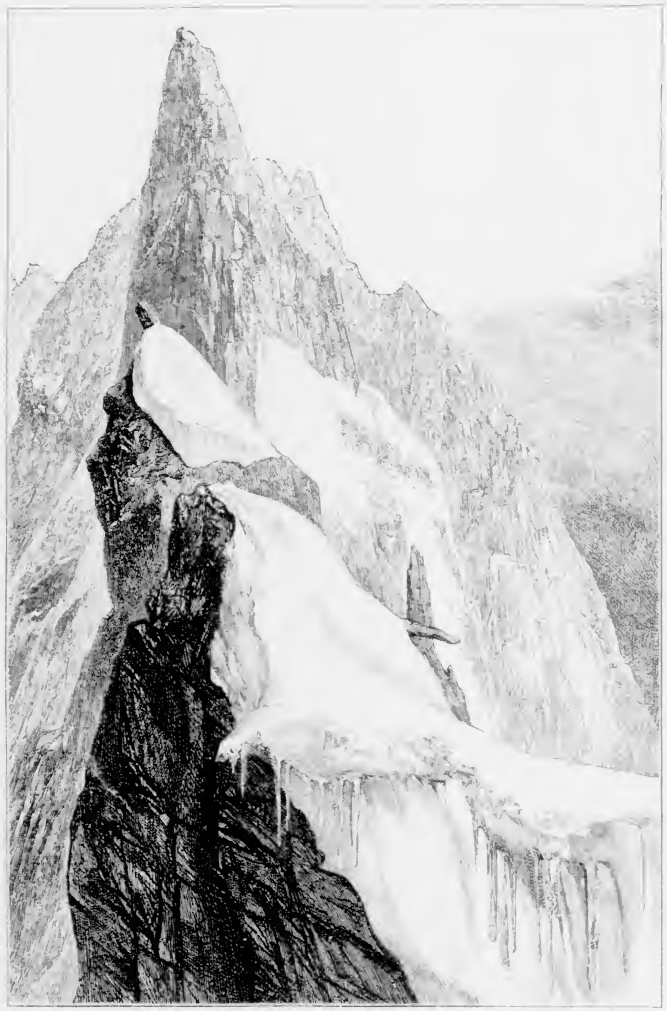
CHRISTIAN ALMER.[1]

ourselves upon a huge rhomboidal mass of ice, and still separated from the Argentière Glacier by a gigantic crevasse. The only bridge over this lower schrund was at its eastern end, and we were obliged to double back to get to it. Cutting continued for half-an-hour after it was passed, and it was 5.35 p.m. before the axes stopped work, and we could at last turn back and look comfortably at the formidable slope upon which seven hours had been spent.[2] When we arrived upon the Glacier d'Argentière, our work was as good as over. We drove a straight track to the châlets of Lognan, and thence the way led over familiar ground. Soon after dusk we got upon the high road at les Tines, and at 10 p.m. arrived at Chamonix." *Scrambles amongst the Alps*, chap. xvii.

This pass has subsequently been traversed twice in the contrary direction (starting from Lognan); but, notwithstanding the attractions that it has for the Alpinist, no one, I believe, has again crossed it from Courmayeur to Chamonix. There are few places in the Range

[1] By permission, from a photograph by Mr. E. Edwards.

[2] I estimate the height of this slope at 1200 feet. The triangulation of Capt. Mieulet makes the height of the pass 11,624 feet above the sea.



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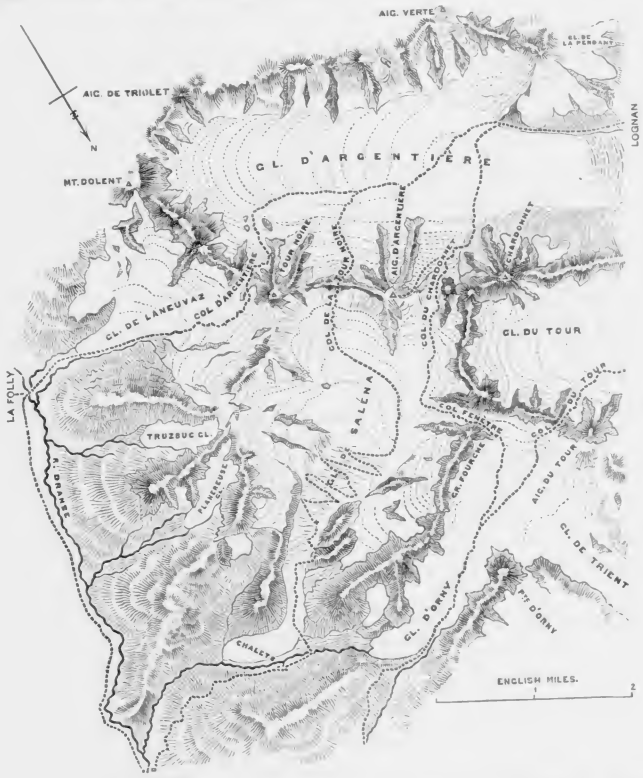
of Mont Blanc that offer better opportunities for the use of the ice-axe.[1]

On the N.E. side of the Glacier d'Argentière, the slopes between Mont Dolent and the Aig. du Chardonnet are less steep, but not less



beautiful than the greater ones of the Verte and les Droites. Three passes lead across them.

The **Col d'Argentière**, 11,549 feet **(Cx. T. 19, courses ext.)**, was dis-

[1] The severity of the labour on this occasion caused Almer's right arm to swell in a rather alarming manner on the following day; but this did not prevent him from doing the greater part of the work upon the first ascent of the Aiguille Verte, three days later. This excellent guide, who is now over 70 years of age, is still on the active list, and is more vigorous than many men of five-and-twenty.

covered by Auguste Simond of les Tines while searching for crystals, and was first crossed, on June 22, 1861, by him and his son along with Mr. Stephen Winkworth and Tobie Simond. They took 7 hs. from Lognan to the top of the pass, and 12 hs. more in descending *viâ* the Glac. de Laneuvaz to la Folly in the Val Ferret, and thence to Orsières.[1] The summit of the Col is on the south-east side of **la Tour Noire**, 12,608 feet, a little peak that can be climbed (by rocks) in 1½ hs. from the pass. This ascent was first made on Aug. 3, 1876, by the late Mons. E. Javelle and Mr. F. Turner.

In July, 1862, the late Mr. R. J. S. Macdonald and the Rev. Hereford B. George, with Melchior Anderegg and Christian Almer, proposed to cross the Col d'Argentière; but through taking the W. instead of the E. side of the Tour Noire they invented the **Col de la Tour Noire** (height about the same as the Col d'Argentière) and descended on to the Glac. de Saleinoz (Saleinaz, Salena) instead of the Glac. de Laneuvaz, where there passed a night in a hollow of the ice (at the point marked with a cross upon the accompanying Plan), and arrived at Orsières at 9 on the following morning, having occupied 31 hours in getting to that dirty place from Argentière![2] This pass has not, I believe, been again crossed from Argentière to Orsières. Like the Col Dolent, it is not included in the Cx. T. des courses.

The third pass, the **Col du Chardonnet**, 10,978 feet **(Cx. T. 14, 16, courses ext.)**, is the lowest depression between the Aigs. d'Argentière and du Chardonnet. In 1861, Mr. Winkworth remarked, "Between the Chardonnet and the Argentière is a tributary glacier, steep and crevassed, but I thought not impracticable, and leading—who knows where? Simond thought to the Glac. du Tour." It actually leads to the Glacier de Saleinoz. The maps of Mont Blanc at that time were much at fault at this end of the Range. The Col was first crossed on Aug. 24, 1863, by Mr. A. Adams-Reilly (for the Survey which was necessary to produce his Map) along with Mr. S. Brandram, the eminent 'reader.' After descending to the upper part of the Saleinoz Glacier, Reilly went through the Fenêtre de Saleinoz (marked on the Plan upon p. 130 Col Fenêtre), then descended the Glac. d'Orny by the way usually taken when crossing the Col du Tour, and arrived at Orsières in 15¼ hs., halts included. Ex. halts, about 11¼ hs. is average time.

Of late years, an excursion has been established from Lognan over the **Col du Chardonnet**, the **Fenêtre de Saleinoz**, 10,856 feet, and the **Col du Tour**, 10,991 feet, descending upon the Village of le Tour, 4695 feet, and returning thence to Chamonix **(Cx. T. 17, courses ext.)**[3]

[1] The excursion is described by Mr. Winkworth in the second series of *Peaks, Passes and Glaciers*, vol. i, pp. 231-48. The height of the pass is stated there to be 12,556 feet, and its summit is laid down upon the map accompanying the paper in a position that it does not occupy.

[2] This adventure is related by the Rev. H. B. George in a very interesting paper in the *Alpine Journal*, vol. i, pp. 274-88. The Col was named after la Tour Noire, and that name appears to have been given to the peak because it is a tower or pinnacle of dark rock. Upon the Mieulet and the Siegfried Maps the Peak is called le Tour Noir! and M. Kurz, in his *Guide à l'usage des ascensionnistes*, calls the Pass Col du Tour Noir! On the folding map I follow the Official spelling.

[3] I am told that young Chamoniards who aspire to be Guides are made to cross these three passes in a day, as a test of their proficiency.

The round is done in one day. The track is marked on the folding map. [A variation can be made on this by going through the **Fenêtre du Tour** (after crossing the Col du Chardonnet), which takes less time, and spares the trouble of descending from the Fenêtre de Saleinoz on to the Glac. du Trient, and remounting to the Col du Tour.][1]

	h.	min.
Lognan to the summit of Col du Chardonnet . .	4	45
Col du Chardonnet to top of Fenêtre de Saleinoz .	2	15
Fenêtre de Saleinoz to Village of Argentière . .	4	45

The principal Ascents to be made from Lognan are those of the Aig. d'Argentière and the Aig. du Chardonnet. The **Aiguille du Tour**, 11,585 feet **(Cx. T. 37, courses ext.)**, is an insignificant peak, which can be gained in a little more than an hour from the Col du Tour, by mounting on the side of the Glac. du Trient.

The **Aiguille d'Argentière**, 12,799 feet **(Cx. T. 34, courses ext.)**, is the highest point at this end of the Chain, and commands everything at the northern end of the Range; and it was this fact that led to the first ascent by Mr. Reilly in 1864. We made more than one attempt before the summit was gained. Reilly had a notion that the ascent could be accomplished by following the ridge leading to the summit from the Col du Chardonnet. This route was found unprofitable and we[2] then descended some distance from the Col towards the Argentière glacier, and re-ascended by a small lateral glacier and a couloir above it, directly towards the summit.

"The glacier was steep, and the snow gully rising out of it was steeper. Seven hundred steps were cut. Then the couloir became *too* steep. We took to the rocks on its left, and at last gained the ridge, at a point about 1500 feet above the Col. We faced about to the right, and went along the ridge; keeping on some snow a little below its crest, on the Saleinoz side. Then we got the wind again; but no one thought of turning, as we were within 250 feet of the summit.

"The axes of Croz and Couttet went to work once more, for the slope was about as steep as snow could be. Its surface was covered with a loose, granular crust; dry and utterly incoherent; which slipped away in streaks directly it was meddled with. The men had to cut through this into the old beds underneath, and to pause incessantly to rake away the powdery stuff, which poured down in hissing streams over a hard substratum. Ugh! how cold it was! How the wind blew! Couttet's hat was torn from its fastenings, and went on a tour in Switzerland. The flour-like snow, swept off the ridge above, was tossed spirally upwards, eddying in *tourmentes;* then, dropt in lulls, or caught by other gusts, was flung far and wide to feed the Saleinoz. 'My feet are getting suspiciously numbed,' cried Reilly: 'how about frost-bites?' 'Kick hard, sir,' shouted the men; 'it's the only way.' *Their* fingers were kept alive by their work; but it was cold for the feet, and they kicked and hewed simultaneously. I followed their example too violently, and made a hole clean through my footing. A clatter followed as if crockery had been thrown down a well.

"I went down a step or two, and discovered in a second that all were

[1] The ascent to the Col du Tour, between the Village of le Tour and the summit, is laborious, and the views are ordinary, compared with others which can be obtained from more accessible positions.

[2] Reilly and I, Michel Croz and François Couttet (the founder of the Grand Hotel Couttet at Chamonix, and father of its present proprietor).

standing over a cavern (not a crevasse, speaking properly) that was bridged over by a thin vault of ice, from which great icicles hung in groves. Almost in the same minute Reilly pushed one of his hands right through the roof. The whole party might have tumbled through at any moment. 'Go ahead, Croz, we are over a chasm!' 'We know it,' he answered, 'and we can't find a firm place.' In the blandest manner, my comrade inquired if to persevere would not be to do that which is called 'tempting Providence.' My reply being in the affirmative, he further observed, 'Suppose we go down?' 'Very willingly.' 'Ask the guides.' They had not the least objection; so we went down, and slept that night at the Montanvert.

"We set out on the 14th of July, with Croz, Payot,[1] and Charlet, to finish off the work which had been cut short so abruptly, and slept, as before, at the Châlets de Lognan. On the 15th, about mid-day, we arrived upon the summit of the aiguille, and found that we had actually been within one hundred feet of it when we turned back upon the first attempt. It was a triumph to Reilly. In this neighbourhood he had performed the feat (in 1863) of joining together 'two mountains, each about 13,000 feet high, standing on the map about a mile and a half apart.' Long before we made the ascent he had procured evidence which could not be impugned, that the Pointe des Plines, a fictitious summit which had figured on other maps as a distinct mountain, could be no other than the Aiguille d'Argentière, and he had accordingly obliterated it from the preliminary draft of his map. We saw that it was right to do so. The Pointe des Plines did not exist."[2] *Scrambles amongst the Alps*, chap. xi.

The Swiss Surveyors seem to have an affection for the name 'Pointe des Plines,' and have bestowed it (in the Siegfried map) upon a previously unnamed point, 10,056 feet, on the northern side of the Glac. de Saleinoz. It is enough to make Reilly rise from his grave.

The **Aiguille du Chardonnet**, 12,543 feet **(Cx. T. 35, courses ext.)**, occupies a commanding position, and from its summit there is a view only slightly inferior to that from the Aig. d'Argentière. It was first ascended on Sept. 20, 1865, by Mr. Robert Fowler, with the guides Michel Balmat and Michel Ducroz of Chamonix. They started from the Village of Argentière, followed the path up the right bank of the Glac. d'Argentière until near the mountain, and then turning eastwards struck the ridge high up which runs from the summit of the Chardonnet towards the north-west, and followed it to the top. Nearly 18 hours were occupied from the Village of Argentière to the summit and back. Mr. P. W. Thomas in Aug., 1879, improved upon this. He went from the Village of Argentière up the Glac. du Tour directly towards the mountain (not by the Col du Tour route), climbed its northern side (at the last part of the way following the same ridge as Mr. Fowler), and took only 8½ hs. getting to the summit and 3½ hs. coming back. This appears to be the best route that has been discovered up the Chardonnet.

[1] The Michel Payot who is referred to in the Introduction and elsewhere.

[2] Left Lognan at 3.15 a.m.; arrived on summit 11.20 a.m., and at the Village of Argentière 7.10 p.m. Time 12 h. 35 min. actual walking. The route taken on the first ascent remains *the* route. It is questionable whether anything is gained in time by descending to Argentière instead of *vid* Lognan.

CHAPTER XIII.

THE ASCENT OF MONT BLANC.

ROUTES—BY THE BOSSES—BY THE CORRIDOR—TIMES ASCENDING AND DESCENDING—ST. GERVAIS ROUTE—COST—REFUGES—THE SUMMIT RIDGE—CREVASSES NEAR THE SUMMIT—VIEW FROM THE SUMMIT —THE SHADOW OF MONT BLANC—THE EIFFEL GALLERY.

MOST of the Excursions which are upon the Chamonix list have now been mentioned,[1] but there still remains the Ascent of Mont Blanc itself. There are three routes which are more or less used on the French side,[2] viz. :—

1. **From Chamonix by the Grands Mulets, Grand Plateau, and Bosses du Dromadaire.**
2. **From Chamonix by the Grands Mulets, Grand Plateau, Corridor and Rochers Rouges.**
3. **From Chamonix (or St. Gervais), by the Aiguille and Dôme du Goûter.**

and there are five others starting on the Italian side, viz. :—

4. **From Courmayeur, by the Glac. de Miage, Glac. du Dôme, and Dôme du Goûter.**
5. do. **by the Glacier du Mont Blanc.**
6. do. **by the Glacier de la Brenva.**
7. do. **by the Col du Géant and Aiguille du Midi.**
8. do. **by the Glaciers de Brouillard and de Fresnay, and the Mont Blanc de Courmayeur.**

These five latter (Nos. 4-8) will be referred to in Chapter XIV.

Routes Nos. 1, 2, are used about equally, and the number of the persons who go by them much exceeds that of those who use all the other ways put together. They are marked in strong dotted line upon the folding Map.

So far as the Grands Mulets see pp. 114-115.[3] Upon starting upwards from the Pavillon, it is customary to go to the upper end of

[1] Several amongst the residue (the passage of the Col de la Brenva, and the Ascents of the Aig. du Géant and the Grandes Jorasses) will be dealt with in connection with Courmayeur.

[2] The old route from the Grand Plateau to the Rochers Rouges (*ancien passage*) is now abandoned.

[3] On the slopes of the Aig. du Midi, above Pierre à l'Echelle and its vicinity, there are many stones which are insecurely poised, and liable to come down at any moment. A Chamonix guide will not fail to point this out. A good look-out should be kept.

the rocks upon which the establishment is situated (strong track) and there take to the Glac. de Taconnaz, and to traverse that glacier from one side to the other. See track on engraving of Mont Blanc from the Brévent. At this part the route mounts gently, and goes towards the ridge connecting the Aig. and Dôme du Goûter. It then turns to the left, and mounts directly towards the summit. Between the asterisk on the engraving and the Grand Plateau, one passes

THE PIERRE POINTUE.

successively the *Petites Montées*, the *Petit Plateau* (see p. 61), and the *Grandes Montées*. The Grand Plateau is the next stage on the ascent. In the engraving, only the edge of it is seen. Five minutes after arriving there, if it is intended to follow **the route of the Bosses**, you turn to the right, and mount by moderately-inclined slopes to the right hand of the rock on which the Vallot Refuge is built, and get close to the summit of the Dôme du Goûter, 14,210 feet. Then turn to the left towards the Vallot Observatory, 14,321 feet, and keep to the crest of the ridge (or near to it) all the rest of the way to the summit. The only steep bits upon this route are upon the Bosses du Dromadaire.

If **the Corridor route** is to be followed, go half across the Grand Plateau towards the summit, then bear to the left, and look for a way over the large crevasse or crevasses which will be found there. The track now becomes visible again on the view from the Brévent, mounting underneath the lower Rochers Rouges, going nearly east, and away from the summit. It then bends round to the right, and emerges a little lower than the Janssen cabane on *the* Rochers Rouges, 14,794 feet. You pass to the left of this, and shape your course for

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the rocks called the Petits Rochers Rouges, 15,030 feet, from them make for the Petits Mulets, 15,391 feet, and steer directly for the Observatory, 15,781 feet, which is in full view during the latter part of the way. The Corridor is steep, but by this route the slopes are at a moderate inclination during the last 900 feet of the ascent.

The two routes are frequently combined. It is not easy to say whether it is better to mount by the Bosses and to descend by the Corridor, than to go the contrary way. During very high wind the Bosses route may be perhaps somewhat more hazardous than the Corridor. In time, there is little difference between one and the other.

Times.—Between the Grands Mulets and the Summit times are largely affected by the condition of the weather and the state of the snow. The same individual under different conditions may take *twice* the length of time that he will upon another. In fine weather, and with the snow in good order, the following are probable times.[1]

ASCENDING VIÂ THE CORRIDOR (EX. HALTS).

	h.	min.
Chamonix to the Pierre Pointue	2	
Pierre Pointue to Pierre à l'Echelle		50
Pierre à l'Echelle to the Grands Mulets	2	10
Grands Mulets to edge of Grand Plateau	3	15
Grand Plateau to top of Rochers Rouges	2	40
Rochers Rouges to Summit		50
Total	11	45

DESCENDING VIÂ THE BOSSES (EX. HALTS).

	h.	min.
Summit to Refuge Vallot	1	10
Refuge Vallot to Grands Mulets	1	55
Grands Mulets to Pierre Pointue	1	50
Pierre Pointue to Chamonix	1	
Total	5	55

The way by the Aig. and Dôme du Goûter (commonly called **the St. Gervais Route**) has nothing to recommend it except that the view on the earlier part of the ascent is more extensive than upon Routes 1, 2. Some start from Chamonix, and others from the Pavillon on the Col de Voza, or the Pavillon Bellevue **(Cx. T. 8, courses ext.)**, or St. Gervais. There is a *Cabane*, 12,530 feet, a little to the S. of the summit of the **Aig. du Goûter,** 12,615 feet. From St. Gervais to the *cabane* occupies about 8 hs., and thence to the Refuge Vallot is about $1\frac{3}{4}$ hs. The Aig. du Goûter can be easily ascended from the Grands Mulets in 3 hs. **(Cx. T. 9, courses ext.)**.

Expense.—The Chamonix tarif for Mont Blanc is 100 francs per Guide **(Cx. T. 1, courses ext.)**. If two are taken by a single individual, and a night is passed at the Grands Mulets, the total cost will be little if at all under £12.

[1] Mont Blanc has been ascended on various occasions in one long day. On July 21, 1865, Mr. F. Morshead of Winchester left Chamonix at 12.30 a.m., arrived on the summit at 10 a.m., and returned to Chamonix at 4.25 p.m., thus making the ascent in 16 hours, including halts.

It is to be noted that the Chamonix Tarif takes various contingencies into consideration. If the tourist starts for Mont Blanc and gets no higher than the Grands Mulets, he will be charged 20 francs only, if he returns within one day **(Cx. T. 2, courses ext.)**. If he gets to the Grand Plateau, the charge will be 50 francs **(Cx. T. 4, c. ext.)**; to the top of the Corridor, or the top of the Bosses, 70 francs **(Cx. T. 5, c. ext.)**. If he gets higher than these points the full 100 francs may be exacted. If the ascent occupies more than three days, each guide must be paid 10 francs extra, per day.

The prices at the Grands Mulets are high, and the food is indifferent. Economy can be effected by taking provisions from Chamonix instead of buying them at the Grands Mulets; but this course is not looked upon favourably by Chamonix Guides, or at the Grands Mulets.

A party on the Ascent of Mont Blanc, whether accompanied by a guide or not, should consist of not fewer than three persons; and this applies to all the excursions that are mentioned in this book upon which it is necessary to traverse snow-covered glacier.

Refuges.—The Observatory on the Summit, the Cabane on the Rochers Rouges, and the Vallot Observatory are private property, and admittance can only be obtained by favour.[1] The Refuge Vallot is on a different basis. There is right to admittance upon payment (see page 68). But the building is small, it is far from being comfortable, and is generally in a very objectionable condition. The principal advantage in passing a night there is the opportunity it affords of arriving on the summit at an early hour to see the view. The *cabane* on the Aig. du Goûter is open to all.

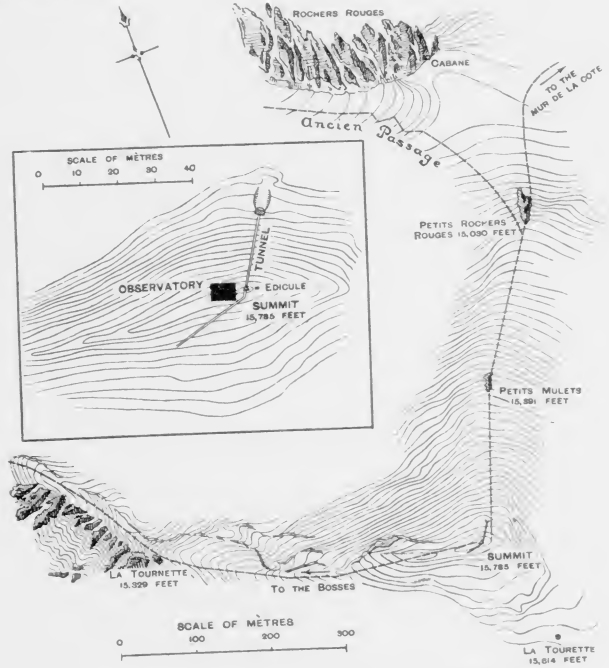
The Summit has been described by various authors as resembling the back of a donkey, a pear cut in half, and the back of a carp. I am unable to account for these aberrations of intellect. The summit is a ridge 145 paces long, descending more steeply on the French than upon the Italian side. Its crest is nearly level, but the eastern is *slightly* higher than the western end. There is every probability that three rocky ridges meet almost immediately underneath the Observatory, and at no great distance below it. The little patch of rock on the Italian side called la Tourette is only 171 feet lower than the very highest point.[2] The summit of the Mont Blanc de Courmayeur lies in the same direction, and can be visited in a short hour. Rope should be employed.[3] The condition of the snow on the very top of Mont Blanc is usually good. The greater part of that which falls is blown or drifted away, and the small amount that remains behind speedily binds to the old snow underneath.

[1] Mons. Vallot publishes the following notification. "Les savants de toute nationalité sont admis à séjourner et à travailler à l'Observatoire. Ils doivent demander l'autorisation au directeur (M. J. Vallot, 61 avenue d'Antin, à Paris), en indiquant sommairement l'objet de leurs travaux. Ils devront emmener avec eux, à leurs frais, un des *guides-conservateurs* (Alphonse Payot, Michel Savioz, Jules Bossonney) qui se chargera de faire la cuisine et le service."

[2] By the courtesy of M. Eiffel, I am permitted to reproduce the accompanying Plan of the Summit, which was made for him in 1891.

[3] Though there are not at the present time any visible crevasses *close* to the summit-ridge, a few years ago it was intersected by a rather considerable one, which rendered it difficult to go from one end to the other.

View from the Summit.—Those who are early or late upon the summit stand the best chance of viewing the incomparable panorama that can be seen from it. Before mid-day, clouds almost always form over Italy.



PLAN OF THE SUMMIT OF MONT BLANC, BY X. IMFELD, 1891.

The nearest part of the *Northern* view embraces M. Blanc du Taeul, Mont Maudit, the Aig. du Midi, Dôme and Aig. du Goûter, Chamonix and the Valley, range of the Brévent, the Buet, Dent du Midi, the Aig. Verte, and basin of the Talèfre. Farther away, the Lake of Geneva and mountains of the Oberland. In the *Eastern* view the Col and Aig. du Géant, Grandes Jorasses, Grand Combin, all between the Weisshorn and Monte Rosa, part of the Val Ferret, the upper end of the Val d'Aoste, and (on the right) the M. Blanc de Courmayeur, are amongst the principal features. The *Southern* shews M. Blanc de Courmayeur on the left, the trough of the Italian Glac. de Miage, the Aigs. de Trélatête, part of the Val Véni, the Pyramides Calcaires, and Col de la Seigne; in the distance, the whole of the Graian Alps; and in the extreme distance, Monte Viso and the Maritime Alps are in the centre, and the Alps of Dauphiné on the right. The *Western* view has the summit-ridge in the foreground, Sallanches

in the middle distance, the Jura and a large part of France on the horizon. The *Southern* section is, perhaps, the most striking one, though at every point of the compass there is *something*.

The Shadow of Mont Blanc projected in the air appears only just after sunrise, and shortly before sunset. I have seen this remarkable apparition twice. The first time on Aug. 9, 1893, when promenading the summit-ridge at daybreak, watching the gradual development of the view. "Presently, a glow behind the Mischabelhörner indicated where the sun was about to rise. At the next turn, ranges began to take form, and in the direction of Aix-les-Bains an unknown mountain, as high as Mont Blanc itself, made its appearance. While returning to the east-north-east the orb of day came up with a bound; rays streamed between the peaks and separated the ridges, and gleaming tops broke out like watch-fires around the vast circumference. The next turn to the west shewed that the unknown mountain was a fraud: it was the shadow of Mont Blanc projected in the air. Before the sun had fairly risen the deception was not apparent. The huge, grey form, startling by its immensity, bore a most striking resemblance to a real mountain. The tones deepened as it sank, and in forty minutes it died away." Prof. Ch. Martins seems to have been the first who saw the shadow at *sunset* (in Aug., 1844), and he declared that the *Aurora Borealis* alone could vie with this magnificent phenomenon.

The Gallery (or Tunnel) which was driven in 1891 by orders of M. Eiffel (see pp. 71-3) was in a good state of preservation in 1893, and I could walk from one end to the other without stooping. In the following year its dimensions had diminished so much that one could not stand upright at any part, and entry had to be effected on all fours; and in 1895 no one, I believe, was able to discover the entrance to it. On July 26, 1894, at 9.45 a.m., the temperature of the interior of the gallery, 35 feet from its mouth, was 2°·5 Faht., or 29°·5 F. below freezing-point. At the same time, the temperature of the external air in the shade was 18° F.

Precautions.—Mont Blanc is particularly liable to rapid changes in weather, and to sudden and extreme variations of temperature. *In a single hour*, the best weather often changes to the worst. Many persons are unacquainted with this fact, and start for an ascent without adequate protection (see page 62). Gloves should be taken. Felt boots are excellent for use on the summit, where the temperature of the snow a few inches below the surface is permanently twenty degrees and upwards below the freezing-point.

CHAPTER XIV.

THE TOUR OF MONT BLANC.

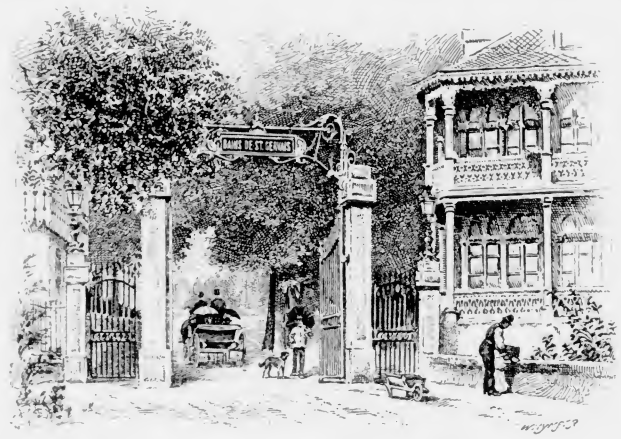
THE BATHS OF ST. GERVAIS—THE *SOURCES*—THE CATASTROPHE—VILLAGE OF ST. GERVAIS—ASCENT OF MONT JOLY—ASCENT OF AIG. DE BIONNASSAY—BIONNAY—CONTAMINES—COL DE MIAGE—THE GREATEST TUMBLE ON RECORD—NOTRE DAME DE LA GORGE—NANT BOURRANT—GLACIER AND COL DE TRÉLATÊTE—COL DU MONT TONDU—COL DU GLACIER—CHÂLET À LA BALME—COL DU BONHOMME—COL DES FOURS—MOTETS—CHAPIEUX—COL DE LA SEIGNE—LAC DE COMBAL—ASCENT OF AIG. DE TRÉLATÊTE—MORAINES OF THE MIAGE—DÔME ROUTE UP MONT BLANC—DÔME HUT—ASCENTS OF MONT BLANC BY THE GLAC. DU MONT BLANC, AND BY THE BROUILLARD GLACIER—MONT BLANC DE COURMAYEUR—BRENVA GLACIER—COURMAYEUR—ASCENT OF MONT SAXE—MONT CHETIF—THE CRAMMONT—COL DE CHÉCOURI—COL DU GÉANT—AIGS. BLANCHE AND NOIRE DE PEUTERET—LES DAMES ANGLAISES—THE AIG. DU GÉANT—MONT BLANC BY THE COL DU GÉANT AND AIG. DU MIDI—COL DE ROCHEFORT—COL DES FLAMBEAUX—COL DE TOULE—ASCENT OF MONT BLANC BY THE BRENVA GLACIER—ASCENT OF THE GRANDES JORASSES—COURMAYEUR TO THE COL FERRET—ASCENT OF MONT DOLENT—CHÂLETS DE FERRET TO ORSIÈRES—CHAMPEY—MARTIGNY—THE FORCLAZ—HOW TO GET AWAY FROM CHAMONIX.

A STURDY pedestrian can walk round the Range of Mont Blanc in four days. There is a carriage-road for most of the distance, and a mule-path the rest of the way.

1st day.—Chamonix *viâ* le Fayet and St. Gervais to Nant Bourrant.
2nd day.—Nant Bourrant by the Cols du Bonhomme and de la Seigne to Courmayeur.
3rd day.—Courmayeur over the Col Ferret to Orsières, or Champex.
4th day.—Orsières (or Champex) *viâ* the Great St. Bernard Road, the Forclaz, and the Tête Noire (or the Col de Balme) to Chamonix.

If *three* days are taken between Chamonix and Courmayeur, the first night is usually passed at Contamines, and the second at les Chapieux or les Motets.

Chamonix to the Baths and Village of St. Gervais, Contamines, and Nant Bourrant (Cx. T. 75, 76, 77, 80). Chamonix to le Fayet, see pp. 88, 112. The entrance to the Baths of St. Gervais is about 200 yards from the stopping-place of the diligences, just where the Bon Nant Torrent debouches on the plain of Sallanches; and, as it has rather the air of an entrance to a private park, people are sometimes timorous about entering, although they can do so freely. From



ENTRANCE TO THE BATHS OF ST. GERVAIS.

the Bridge of Bon Nant at le Fayet there are three ways by which one can get to St. Gervais the Village. One through the grounds of the Baths, past A and C and by the zigzag path marked on the Plan; or by E, the old road, short and steep (about 25 min. going up, or 15 min. coming down); or by F F, the new road, which has easy gradients, and is much longer than the other ways. There are no houses on the old road; but about one-third way up F there is the HOTEL AND PENSION DES PANORAMAS. I recommend the way through the grounds of the Baths in preference to the other roads.

A few hundred feet from the entrance there are, at A, the **Baths**, in a newly-constructed, handsome, and well-arranged building.[1] The *sources* are at C, near the entrance to the Gorge of Crepin (marked by an asterisk). They are said to have been discovered in 1806 by a workman of Servoz, when trout fishing.

[1] "L'Etablissement thermal, construit sur les plans de M. Jory, est une merveille d'élegance sobre et de commodité. Impossible de rêver rien de plus parfait au point de vue hydrothérapique: cabines de bains, salles de douches de toute nature, salles de pulvérisations, d'inhalations, bains de vapeur du système Berthe si apprécié, massage savant, tout est réuni dans ces Thermes pour assurer l'emploi complet des propriétés thérapeutiques de l'eau minérale, l'observation mathématique des ordonnances médicales, le bien-être et les aisés des baigneurs."

CHAPTER XIV.

THE TOUR OF MONT BLANC.

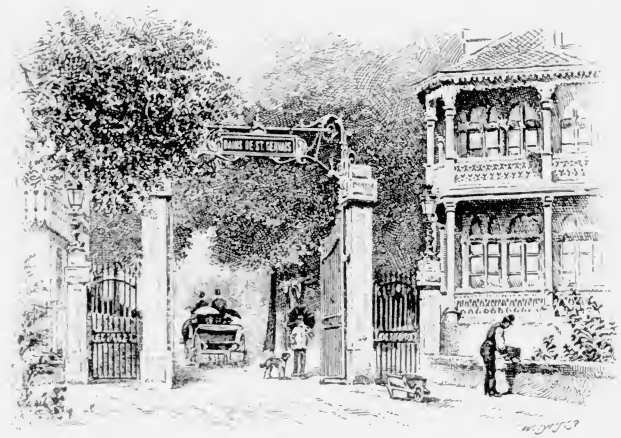
THE BATHS OF ST. GERVAIS—THE *SOURCES*—THE CATASTROPHE—VILLAGE OF ST. GERVAIS—ASCENT OF MONT JOLY—ASCENT OF AIG. DE BIONNASSAY—BIONNAY—CONTAMINES—COL DE MIAGE—THE GREATEST TUMBLE ON RECORD—NOTRE DAME DE LA GORGE—NANT BOURRANT—GLACIER AND COL DE TRÉLATÊTE—COL DU MONT TONDU—COL DU GLACIER—CHÂLET À LA BALME—COL DU BONHOMME—COL DES FOURS—MOTETS—CHAPIEUX—COL DE LA SEIGNE—LAC DE COMBAL—ASCENT OF AIG. DE TRÉLATÊTE—MORAINES OF THE MIAGE—DÔME ROUTE UP MONT BLANC—DÔME HUT—ASCENTS OF MONT BLANC BY THE GLAC. DU MONT BLANC, AND BY THE BROUILLARD GLACIER—MONT BLANC DE COURMAYEUR—BRENVA GLACIER—COURMAYEUR—ASCENT OF MONT SAXE—MONT CHETIF—THE CRAMMONT—COL DE CHÉCOURI—COL DU GÉANT—AIGS. BLANCHE AND NOIRE DE PEUTERET—LES DAMES ANGLAISES—THE AIG. DU GÉANT—MONT BLANC BY THE COL DU GÉANT AND AIG. DU MIDI—COL DE ROCHEFORT—COL DES FLAMBEAUX—COL DE TOULE—ASCENT OF MONT BLANC BY THE BRENVA GLACIER—ASCENT OF THE GRANDES JORASSES—COURMAYEUR TO THE COL FERRET—ASCENT OF MONT DOLENT—CHÂLETS DE FERRET TO ORSIÈRES—CHAMPEY—MARTIGNY—THE FORCLAZ—HOW TO GET AWAY FROM CHAMONIX.

A STURDY pedestrian can walk round the Range of Mont Blanc in four days. There is a carriage-road for most of the distance, and a mule-path the rest of the way.

1st day.—Chamonix *viâ* le Fayet and St. Gervais to Nant Bourrant.
2nd day.—Nant Bourrant by the Cols du Bonhomme and de la Seigne to Courmayeur.
3rd day.—Courmayeur over the Col Ferret to Orsières, or Champex.
4th day.—Orsières (or Champex) *viâ* the Great St. Bernard Road, the Forclaz, and the Tête Noire (or the Col de Balme) to Chamonix.

If *three* days are taken between Chamonix and Courmayeur, the first night is usually passed at Contamines, and the second at les Chapieux or les Motets.

Chamonix to the Baths and Village of St. Gervais, Contamines, and Nant Bourrant (Cx. T. 75, 76, 77, 80). Chamonix to le Fayet, see pp. 88, 112. The entrance to the Baths of St. Gervais is about 200 yards from the stopping-place of the diligences, just where the Bon Nant Torrent debouches on the plain of Sallanches; and, as it has rather the air of an entrance to a private park, people are sometimes timorous about entering, although they can do so freely. From



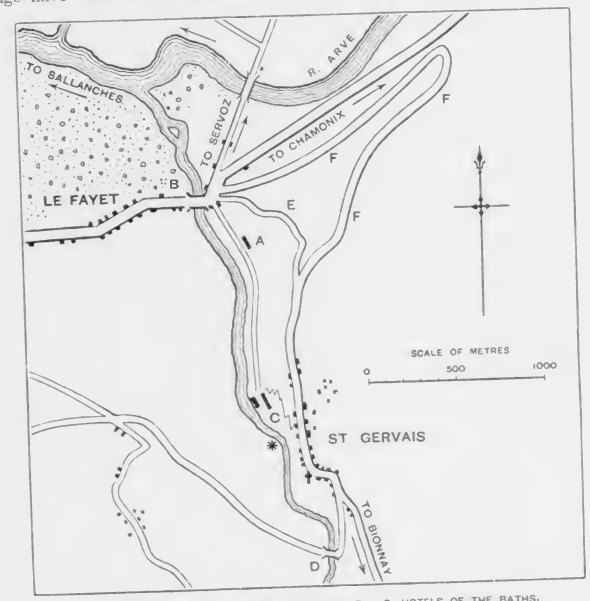
ENTRANCE TO THE BATHS OF ST. GERVAIS.

the Bridge of Bon Nant at le Fayet there are three ways by which one can get to St. Gervais the Village. One through the grounds of the Baths, past A and C and by the zigzag path marked on the Plan; or by E, the old road, short and steep (about 25 min. going up, or 15 min. coming down); or by F F, the new road, which has easy gradients, and is much longer than the other ways. There are no houses on the old road; but about one-third way up F there is the HOTEL AND PENSION DES PANORAMAS. I recommend the way through the grounds of the Baths in preference to the other roads.

A few hundred feet from the entrance there are, at A, the **Baths,** in a newly-constructed, handsome, and well-arranged building.[1] The *sources* are at C, near the entrance to the Gorge of Crepin (marked by an asterisk). They are said to have been discovered in 1806 by a workman of Servoz, when trout fishing.

[1] "L'Etablissement thermal, construit sur les plans de M. Jory, est une merveille d'élegance sobre et de commodité. Impossible de rêver rien de plus parfait au point de vue hydrothérapique: cabines de bains, salles de douches de toute nature, salles de pulvérisations, d'inhalations, bains de vapeur du système Berthe si apprécié, massage savant, tout est réuni dans ces Thermes pour assurer l'emploi complet des propriétés thérapeutiques de l'eau minérale, l'observation mathématique des ordonnances médicales, le bien-être et les aises des baigneurs."

Mons. Gontard (Gonthard), the proprietor, speedily turned them to account, and founded the Bathing establishment. The principal spring is named after him *la source Gontard*, and yields 140,000 litres per day, temp. 102° F. The *source du Torrent* gives 10,000 litres a day, same temp.; and the *source de Mey* supplies 30,000 litres a day, temp. 107° F. For over 80 years the waters of these springs have been known to possess valuable properties.[1] Whether he 'takes



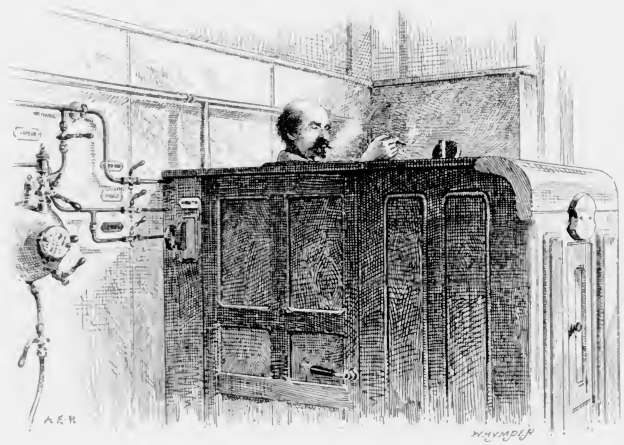
A. THE NEW BATHS. B. BRIDGE OF BON NANT. C. HOTELS OF THE BATHS.
D. PONT DU DIABLE. E. OLD ROAD TO ST. GERVAIS. F. NEW ROAD.

the waters' or not, a pedestrian may do worse than revive himself here, before continuing his walk, with a Vapour Bath on the *système Berthe*,—which is warranted not to asphyxiate.

The Hotels of the Baths are a kil. from the Baths themselves, at the entrance to the Gorge of Crepin. Formerly the Baths and Hotel were united in one establishment, and their appearance, prior to 1892, is shown in the view upon p. 144, which I am permitted to

[1] It is claimed that they are beneficial for the following complaints and disorders. 1. *Maladies de la peau:* Eczéma, urticaire, psoriasis, pityriasis, éruptions furonculeuses, prurigo, lichen, herpès, acné, couperose, etc.; 2. *Maladies des voies digestives:* Dyspepsie, gastralgie, entérite, engorgement du foie, pléthore abdominale, constipation, etc.; 3. *Maladies des voies urinaires:* Gravelle, catarrhe de la vessie; 4. *Maladies de l'utérus:* Catarrhe utérin, engorgement du col, métrites liées aux affections de la peau; 5. *Maladies des voies respiratoires:* Angine granuleuse, laryngite, catarrhe bronchique, catarrhe nasal, ozène, etc.; 6. *Maladies nerveuses:* Névroses d'origine arthritique.

reproduce by the courtesy of M. Tairraz, of Chamonix. On the night of July 11, 1892, the whole of the central (and oldest) portion of these buildings, and the farther ends of the two wings, were erased by the sudden bursting of a sub-glacial reservoir in the little Glacier de Tête Rousse (see p. 112). The flood first coursed down the Valley of Bionnassay, and at its mouth half obliterated the Village of Bionnay. It then joined the Bon Nant Torrent, and did little further mischief until it was compressed between the walls of the Gorge of Crepin; from the lower extremity of which it issued with tremendous violence,



THE SYSTÈME BERTHE.

and in a few minutes battered the Baths to ruin, and swept away and drowned the greater part of the visitors. Those who were in the building on the left escaped; but, with few exceptions, all who were in the central and in the farthest blocks perished. How many were lost is unknown. It is supposed that at the Baths alone the number exceeded one hundred and twenty. The buildings on the left, and those at the near end of the right hand have been restored, but there is now an open space where the others stood—not a trace of them remains.

At the back of St. Gervais there is unlimited space for walks over the down-like mountains which stretch from the Pav. Bellevue to Châtelard on the high road. The best excursions in the contrary direction are the walk to Combloux, and the Ascent of Mont Joly. For either of them you begin by going over the Devil's Bridge (D on the Plan).

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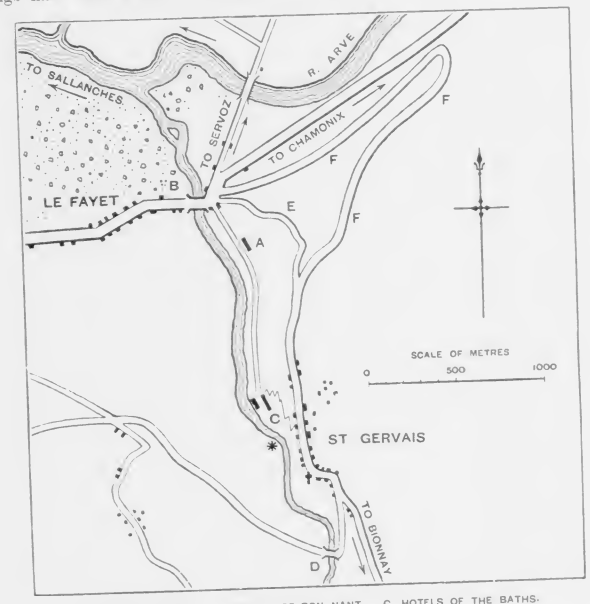

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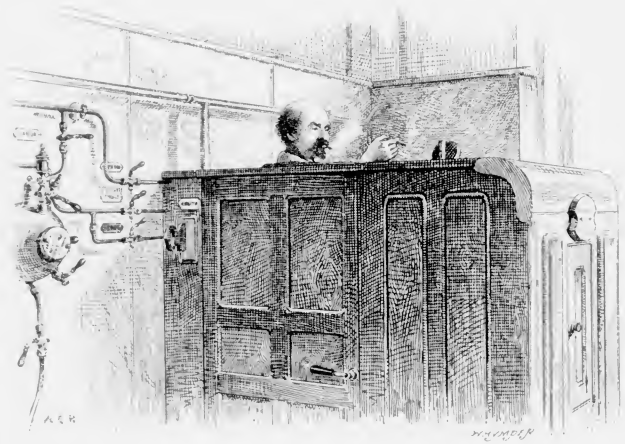

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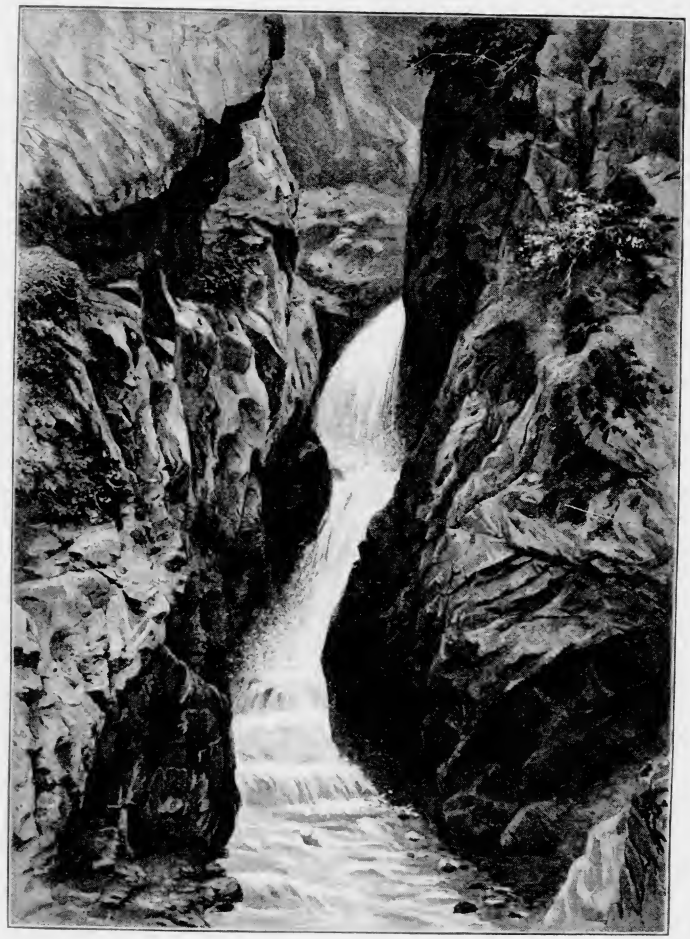
Mont Joly, 8291 feet (**Cx. T. 73, 74**), is the loftiest point on the left bank of the Val Montjoie. It lies due E. of Contamines, but its ascent is generally made from St. Gervais, by passing over the Devil's Bridge, and by a road as far as the villages of Orcin and les Granges; after that by path and grass-slopes. In the middle of the day this is a hot route. Time from St. Gervais to the Pavillon 3¼ hs. The PAVILLON DU MONT JOLI, plank châlet opened in 1895, 12 beds, very civil and obliging proprietor; logement 2 fr. 50; petit déjeuner 1 fr. 25; déjeuner à la fourchette 2 fr. 50; dîner 3 fr. 50; vin ordinaire 1 fr. 25. Pension 10 frs. a day, including wine. From the Pavillon to the summit, by a track, takes about 1 h.; summit to Pavillon 25 min. Wooden cross and *homme de pierre* on the top. The view is most extensive;

THE BATHS OF ST. GERVAIS BEFORE THE CATASTROPHE.

and, besides embracing the Aig. de Bionnassay, the Col de Miage, and a side of Mont Blanc which cannot be seen to such advantage from any other point, extends over a great part of Savoy, and to the Alps of Dauphiné. There is another route *viâ* **St. Nicholas de Véroce,** CAFÉ DU MONT JOLY; CAFÉ NATIONAL, which is more shaded. A carriage-road connects St. Gervais with St. Nicholas, thence there is a mule-path to the Pavillon. Time about 3¾ hs. In descending, a pedestrian can get from the Pav. to St. Nicholas in 35 min., thence to the road at Bionnay in 30 min., and to St. Gervais 45 min. Few English have hitherto visited Mont Joly.

The principal *ascent* that can be made from St. Gervais (after Mont Blanc) is that of the **Aig. de Bionnassay,** 13,324 feet (**Cx. T. 38, courses ext.; Cr. T. 70 frs.**), which is exceeded only in elevation by the Aig. Verte (13,540) and the Grandes Jorasses (13,800). This splendid peak, from some directions, looks finer than Mont Blanc itself. The first ascent was effected on July 28, 1865, by Messrs. Edward North Buxton, F. C. Grove, and R. Macdonald, with the guides J. P. Cachat and Michel Payot.



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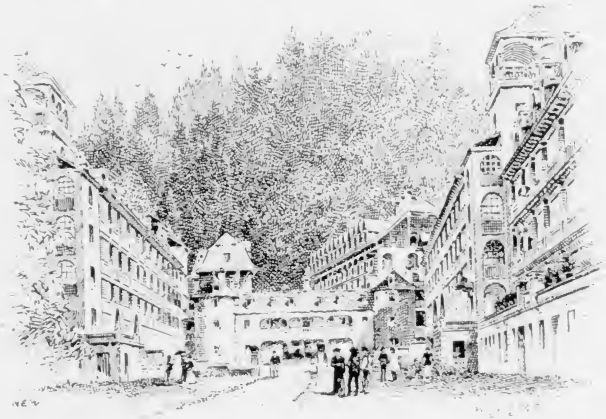

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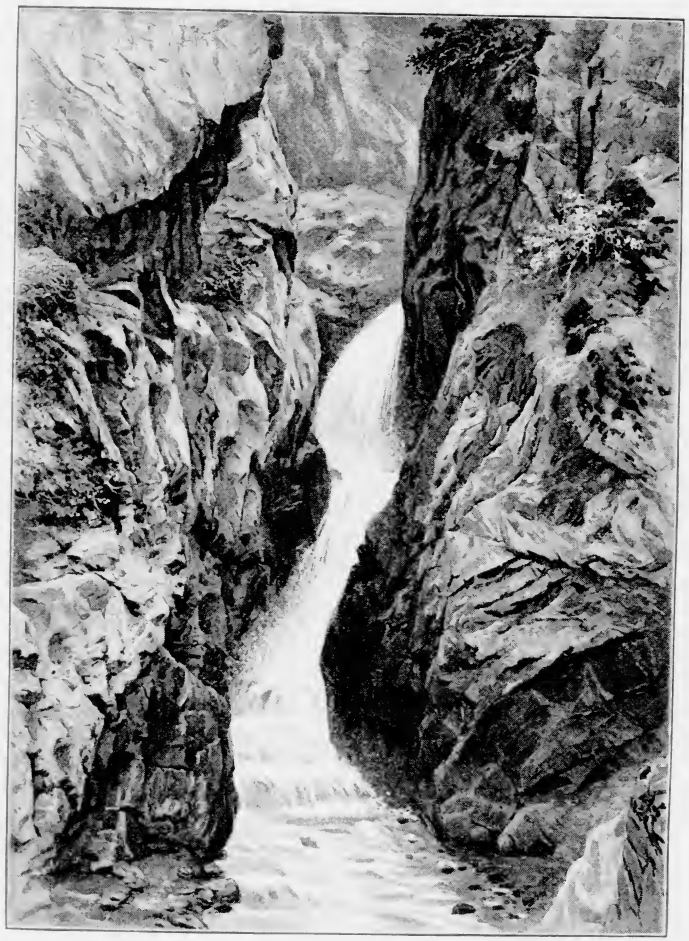

THE GORGE OF CREPIN, ABOVE THE BATHS OF ST. GERVAIS.

They "left the Pavillon Bellevue at 1.20 a.m.. and followed the usual route to the Aig. du Goûter as far as the foot of the Tête Rouges. They then crossed the Glac. de Bionnassay, and ascended an excessively steep glacier which falls from the *arête* connecting the Aig. de Bionnassay with Mont Tricot. The *arête* was attained at 10, and the summit at 3.15 p.m. It was not considered advisable to descend the same way. The *arête* was therefore quitted at a point rather higher than that at which it had been reached, and a descent was effected on the S.W. side, over rocks, to the head of the French Glac. de Miage, which was reached at nightfall. The night was spent on some rocks above the level of the Col de Miage, and the party reached St. Gervais at noon the following day." *Alpine Journal*, vol. ii, pp. 132-3. The track of the first ascent is given on the folding Map.

The ascent of the Aig. de Bionnassay is rarely made, and it is generally accounted difficult.

From St. Gervais to **Bionnay,** 3192 feet, takes 50 min. (no inn; wine can be had, good and cheap). Half way between the two places you pass the village of les Praz. Above Bionnay the Val Montjoie narrows, road good, and well-wooded up to and a little beyond Nant Bourrant. It takes 65 min. easy going from Bionnay to **Contamines,** 3839 feet, HOTEL DU BON HOMME, civil proprietor, prices lower than the average.

[Col de Miage (Cx. T. 21, Cr. T. 50 frs.).[1] About 2 kils. beyond Bionnay, opposite to St. Nicholas, there is the entrance of the vallon leading to the Col de Miage. Two paths, one on each side of the stream, go to the châlets of Miage. Thence to the top of the Col, 11,076 feet, takes abont 4½ hs. The summit of the Col lies S.S.W. of the Aig. de Bionnassay, and the ascent to it from the upper plateau of the French Glac. de Miage is made by a rocky rib, that has at its side a long and steep ice-slope, upon which there has occurred one of the biggest tumbles on record.

On the 11th of July, 1861, a large party of tourists was assembled on the top of the Col de Miage,[2] with the object of discovering whether an ascent of Mont Blanc could be made from this direction. Whilst the rest were stopping for breakfast, one of the party, Mr. Birkbeck, went aside, and the others did not at first remark his absence. When it was noticed, his track was followed, and it was found that he had fallen down precipitous slopes of snow and ice, and was descried nearly half a mile away, at the foot of the slopes, at the head of the French Glac. de Miage. His friends went to his assistance as quickly as possible, but nearly 2½ hs. elapsed before they could reach him. *Between the place where Mr. Birkbeck commenced to slide or fall and the place where he stopped there was a difference of level of about* 1700 *feet!* The slope was gentle where he first lost his footing, and he tried to stop himself with his fingers and nails, but the snow was too hard. "Sometimes he descended feet first, sometimes head first, then he went sideways, and once or twice he had the sensation of shooting through the air." He came to a stop at the edge of a large crevasse. When reached, it was found that he was almost half-skinned by abrasion and friction. "By his passage over the snow, the skin was removed from the outside of the legs and thighs, the knees, the whole of the lower part of the back and part of the ribs, together with some from the nose and forehead. He had not lost much blood, but he presented a most ghastly spectacle of bloody raw flesh." He was transported to St. Gervais, and remained there in a critical condition for some weeks, but ultimately recovered better than might have been expected.

[1] **Cr. T. 50 frs.** is an abbreviation of Courmayeur Tarif des Courses.

[2] Consisting of the Rev. Leslie Stephen, Messrs. F. F. Tuckett, F. Mather, J. Birkbeck, and the Rev. Charles Hudson; accompanied by the guides Melchior Anderegg, Mollard, Hoste, J. J. Bennen, and P. Perrn. Birkbeck was a very young man in charge of Hudson.

The descent from the Col to Courmayeur occupies about 6 hs., and leads down the entire length of the Italian Glac. de Miage to the Val Vény near the Lac de Combal; and thence down the valley by a good path, past la Visaille, 5423 feet. The existence of this pass has been known for about a century, but it is not frequently used. It is possible to go on foot this way from Courmayeur to Chamonix in 19 hs. (see *Peaks, Passes and Glaciers*, 2nd ser. vol. i, pp. 194-207), and, by employing carriages as far as they could be used, it might be done in much less time.]

From Contamines to **Notre Dame de la Gorge** is about 1 h. 40 min. The carriage-road ends there. Notre Dame to **Nant Bourrant (Borrant),** 4780 feet, takes 35 min., small inn. Before arriving there stop a minute to look over the bridge. There is now no other place where refreshments can be had before Chapieux or les Motets, except the Châlet à la Balme; and most of the way is bare and shadowless. Upon these accounts it is preferable to start from Nant Bourrant rather than from Contamines for the second day.

Nant Bourrant is immediately opposite to the end of the **Glac. de Trélatête,** one of the larger glaciers of Mont Blanc, which is not much visited, and is incorrectly delineated upon all maps. The **Pavillon de Trélatête,** 6483 feet, is a small place, often closed. One path leads to it from Nant Bourrant in about 1½ hs., and another from Contamines in rather more than 2 hs. One can get to the Italian side of the chain over the Glac. de Trélatête either by the Col du Mont Tondu, or by the **Col de Trélatête,** 11,477 feet. The latter is an unprofitable short cut, which was first effected by Messrs. C. E. and G. S. Mathews on Aug. 28, 1864. They started from a châlet near the Col de la Seigne at 5 a.m., and occupied 15 hs. in getting over to the Glac. de Trélatête. The night was passed out of doors, three hours above the Pavillon. Much quicker passages can be made, but as a route there is little to be said in its favour. The **Col du Mont Tondu,** about 9400 feet (**Cx. T. 25, courses ext., Cr. T. 25 frs.**), crosses a depression a short distance to the E. of Mont Tondu, 10,486 feet, and descends over the little Glac. des Lancettes, from which one can either go down to les Motets, or coast round the slopes to the east to the summit of the Col de la Seigne. By this way, it takes 7 to 8 hs. from Contamines to the top of the Col de la Seigne. The Col du Mont Tondu was originally called Col de Trélatête, and is described under that name in the first ed. of Ball's *Guide to the Western Alps*, 1863. There is another way from the Trélatête Glac. to the Col de la Seigne by the **Col du Glacier,** a pass which is seldom used, and is somewhat longer than the Col du Mont Tondu.

Nant Bourrant to Courmayeur by the Cols du Bonhomme, des Fours, and de la Seigne.—From Nant Bourrant to the **Châlet à la Barme (Barme),** 50 min., the path rises moderately. The châlet is a poor place, with only the simplest food. After passing it, there is a steep rise for 30 min., and then for a long distance the way is marked by stakes. The gradients again become more moderate, and the path winds round a sort of *cirque* (Plan Jovet) at the base of Mont Tondu and the Tête d'Enclave [hence there is a short cut to Motets over the Col d'Enclave]. At the farther side there is another steep rise, and at the top of this the Col du Bonhomme begins to be

seen, still, however, the best part of an hour away. Keep to the left, against the slopes, and avoid paths on the right. The summit of **the Col**, 8146 feet, is undulating for some distance, no one part being much higher than another; and before it begins distinctly to descend on Chapieux a path goes off to the left, and leads in about 30 min. to the **Col des Fours**, 8891 feet, cairn. A steep descent on the eastern side brings you in 1 h. 50 min. to the bridge over the Torrent des Glaciers at the châlets **les Glaciers**, 5843 feet; and in about 20 min. more to **les Motets (Mottets)**, 6227 feet. The auberge here is not attractive. This is the way usually followed by pedestrians. Going from the Col du Bonhomme down to **les Chapieux**, 4951 feet, adds 2 hs. to the journey, and involves considerable loss of height. The auberges there are poor places.

Though the passage of the Cols du Bonhomme and des Fours is simple enough in fine weather, *when the path can be seen*, one may easily stray when it is covered with snow. For this reason a large part of the way near the top is marked by posts. Anyone may cross it alone in fine weather, but if it is at all snowy or misty guides are desirable. According to Bourrit (*Nouvelle Description*, p. 233) the name Bonhomme was given to the pass because there was upon it, in olden times, a hospice and a hermit devoted to the assistance of travellers.

The way from the Châlet à la Balme is comparatively dull. At Motets it begins to be interesting, and at the top of the **Col de la Seigne**, 8242 feet (which is reached in about 1 h. 40 min.), a grand view opens out of the upper part of the Val Véni (the Allée Blanche) down to the Lac de Combal, and the Italian side of Mont Blanc. The top (the real summit) of the Grandes Jorasses can be seen, and, in the distance, the Grand Combin and Mont Vélan. On the right hand of the Val Véni the Mont Chetif is a prominent feature; and, in the centre, the Aig. Noire de Peuteret between the two Pyramides Calcaires. No apprehensions of losing the way need be entertained here. The ground is of an easy nature. Make for the bottom of the valley, and the right hand (eastern) side of the **Lac de Combal**. Arrived there, stop a few minutes to look at the Aig. de Trélatête, and the great Moraines of the Glac. de Miage.

[The **Aiguille de Trélatête**, 12,900 feet **(Cr. T. 50 frs.)**, is the loftiest peak at this end of the chain. It was first ascended on July 12, 1864, by Mr. Adams-Reilly and myself, with the guides Michel Croz, Michel Payot, and H. Charlet, in order to obtain a view of the Western side of Mont Blanc, which at that time was quite unknown. We camped near the top of Mont Suc (the mountain which will be seen on the other side of the Lac de Combal), at about 9500 feet, and on the morning of the 12th crossed the northern branch of the Glac. de l'Allée Blanche, ascended the S.E. summit of the Trélatête, 12,782 feet, and crossed over it to the highest point. Time from Courmayeur 9½ hs. The route is marked on the folding Map. Of the Western side of Mont Blanc, Mr. Reilly said—

"For four years I had felt great interest in the geography of the chain; the year before I had mapped, more or less successfully, all but this spot, and this spot had always eluded my grasp. The praises, undeserved as they were, which" (the first draft of) "my map had received, were as gall and

wormwood to me when I thought of that great slope which I had been obliged to leave a blank, speckled over with unmeaning dots of rock, gathered from previous maps—for I had consulted them all without meeting an intelligible representation of it. From the surface of the Miage Glacier I had gained nothing, for I could only see the feet of magnificent ice-streams; but now, from the top of the dead wall of rock which had so long closed my view, I saw those fine glaciers from top to bottom, pouring down their streams, nearly as large as the Bossons, from Mont Blanc, from the Bosse, and from the Dôme.

"The head of Mont Blanc is supported on this side by two buttresses, between which vast glaciers descend. Of these the most southern takes its rise at the foot of the precipices which fall steeply down from the Calotte, and its stream, as it joins that of the Miage, is cut in two by an enormous *rognon* of rock. Next, to the left, comes the largest of the buttresses of which I have spoken, almost forming an aiguille in itself. The next glacier descends from a large basin which receives the snows of the summit-ridge between the Bosse and the Dôme, and it is divided from the third and last glacier by another buttress, which joins the summit-ridge at a point between the Dôme and the Aiguille de Bionnassay." *Reilly.*

We agreed to name 'the most southern' of these glaciers the **Glacier du Mont Blanc**, and 'the next one' the **Glacier du Dôme.**[1] These names have been generally adopted. 'The third' glacier is nameless, but is sometimes called the Italian Glacier de Bionnassay. The great buttresses betwixt these magnificent ice-streams have supplied a large portion of the enormous masses of debris which are disposed in ridges round about, and are strewn over, the termination of the Glacier de Miage in the Val Véni. These moraines used to be classed amongst the wonders of the world.

The Dôme route up Mont Blanc (Cr. T. 100 frs.), the most frequently used of the ways up the mountain on the Italian side, leads by the Ital. Glac. de Miage to the base of the rocks (Aig. Grise) on the western side of the Glac. du Dôme. These rocks are ascended to a Cabane **(Cabane du Dôme, or Dôme hut)**, about 10,900 feet, which has been erected by the Turin section of the Italian Alpine Club. On the following morning the ascent is continued by the Glac. du Dôme to its head, and the ridge is struck that leads from the Dôme du Goûter to the Aig. de Bionnassay, about mid-way between the two peaks. The *arête* of this ridge (very narrow)[2] is followed nearly to the summit of the Dôme (which is passed a little to the right) and completed in the usual way by the ridge of the Bosses. Time, Courmayeur to Dôme hut about 7 hs.; hut to summit 7 to 8 hs., or more under unfavourable conditions. This route is marked on the folding Map.

The route up **Mont Blanc by the Glacier du Mont Blanc** is more direct, but less frequently followed, than the Dôme route. Mr. T. S. Kennedy, a rapid walker, who first went this way in 1872, took 4½ hs. from Courmayeur to his bivouac on the rocks between the Glacs. du Dôme and du Mont Blanc, about 1 h. above the Glac. de Miage, and 10½ hs. thence to the summit. Two *cabanes* have been erected upon the rocks on the W. side of the Glac. du Mont

[1] The two glaciers were so named upon Reilly's Map (1865), and on the Mont Blanc Map to *Scrambles* (1871). In Mieulet's Map (1865) no names were given to these glaciers, and they are also unnamed on the Italian Govt. Map, scale $\frac{1}{100000}$ (1885), and the Ital. Govt. Map, scale $\frac{1}{50000}$ (corrected to 1894).

[2] Count Villanova and J.-J. Maquignaz perished here in 1890. See p. 60.

Blanc by the Italian Alpine Club, one about 1½ hs. above the Miage Glac., and the other (called the Quintino Sella hut) about 1 h. higher (11,100 feet).

The route up Mont Blanc by the Glacs. de Brouillard (Broglia) and de Fresnay is very seldom taken. It was invented in 1877 by Mr. J. Eccles, who took 10 hs. (and on a previous occasion 11¼ hs.) from Courmayeur to his *gîte* on the ridge between the two glaciers, at a height of about 12,400 feet;

THE CABANE DU DÔME.

and from that spot 9 hs. 40 min. more to the summit of Mont Blanc, which was arrived at by going over the top of the Mont Blanc de Courmayeur.[1] The times mentioned for these two routes include halts, but in each case they were brief.]

1 The name Mont Blanc de Courmayeur is given to the end of a buttress of Mont Blanc, forming a cliff about ¾ kil. from the summit on the S.E. side. There is a considerable discrepancy between the French and Italian determinations of its elevation.

Height of Mont Blanc according to Mieulet	15,781 ft.	According to Ital. Map		15,772 ft.
Do. M. Blanc de Courmayeur do.	15,604 ,,	do.	do.	15,450 ,,
Difference of level . .	177 ,,	do.	do.	322 ,,

I think that the difference of level *exceeds* the higher of these two determinations.

In drawing his frontier line, Capt. Mieulet made it pass over the Mont Blanc de Courmayeur. On the Italian Map the line is drawn through the summit of Mont Blanc. On my Map I follow the older authority (Mieulet).

At the eastern end of the Lac de Combal the path to Courmayeur crosses to the left bank of the valley, and skirts the huge moraines of the Glac. de Miage for about 3 kils. It then recrosses to the right bank, and in a few minutes arrives at **la Visaille.** The RESTAURANT DU CHÂLET DE LA VISAILLE is not prepossessing in appearance, but is kept by a civil hostess, who supplies good, plain food at honest prices. Char road commences a little lower down (in shade rest of the way down the Val Véni) and in 50 min. brings you to the bridge for the Brenva, CHÂLET DE PURTUD (cantine), and in 25 min. more to the **Chapel of Notre Dame de Guérison,** opposite to which there is another bridge for **the Grotto** in the Brenva Glacier. The views of the Aig. de Peuteret and Brenva Glac. whilst descending this part of the valley are extremely grand. The road soon turns sharply to the right, and in 35 min. more you are at Courmayeur.

	h.	min.
Nant Bourrant to Châlet à la Balme		50
Balme to Motets by the Cols du Bonhomme and des Fours .	4	30
Motets to top of Col de la Seigne	1	40
Col de la Seigne to la Visaille	2	10
La Visaille to Notre Dame de Guérison	1	15
Notre Dame de Guérison to Courmayeur		35

Courmayeur, 4045 feet; Pop. 1201.—HOTEL ANGELO; HOTEL DU MONT BLANC (10 min. N. of Courmayeur); GRAND HOTEL ROYAL; HOTEL DE L'UNION. The ROYAL is the best hotel in this district, and has been conducted by its present proprietor, M. Bertolini, for 40 years. This village is frequented by many Italians, who get there easily from Milan, Turin, etc., by rail to Aosta, and thence by diligence. At Pré St. Didier (40 min. on the road to Aosta) there are mineral springs and Baths. Numerous excursions can be made. See Appendix for 'Tarif des Courses' and List of Guides. The summit of Mont Blanc cannot be seen from the village. The most prominent object in view is the Aiguille, or Dent, du Géant,—a gigantic tooth which all the dentists in the world cannot draw, or even scale. Of short and easy excursions, the ascents of Mont Saxe, Mont Chetif, and the Crammont; and walks to the Brenva Glacier, and up the Val Véni to the moraines of the Miage are the best. They can be made at any hour of the day.

The Ascent of Mont Saxe (Monts de la Saxe), 7736 feet (**Cr. T. 6 frs.**), can be made a *short* excursion by following the track shewn on the folding Map, or it may be turned into a longer one by going along the top of the mountain to what is called the Tête Bernarda, 8314 feet, descending upon Praz Sec, and returning by the road down the Val Ferret. This is one of the finest excursions that can be made anywhere. It gives from beginning to end a succession of magnificent views of the Italian side of Mont Blanc. The road home is good and pleasant. Mont Saxe is an excellent hunting-ground for botanists and entomologists. The ascent to the near end of the mountain will take 2½ to 2¾ hs. **Mont Chetif,** 7687 feet (**Cr. T. 6 frs.**), is immediately opposite to the Brenva Glacier, and for viewing it and the S.E. side of Mont Blanc is in some respects superior to Mont Saxe; but its summit is not extensive, and one has not the same liberty of motion. Time ascending about 3 hs. **The Crammont (Tête de Crammont),** 8980 feet (**Cr. T. 8 frs.**), lies

S.W. of Courmayeur, and due S. of Mont Chetif, which it overlooks. This ascent is commenced by descending to Pré St. Didier, thence ascending the Little St. Bernard Road for ½ h., and afterwards going by the châlets of Chanton, 5971 feet. Time, Courmayeur to summit, about 4½ hs. A variation on the ordinary way to the Allée Blanche and the Glac. de Miage can be made by going round the S. side of Mont Chetif *viâ* the **Col de Chécouri (Chécruit)**. Cross the village bridge to the hamlet of Dolonne. Thence to the Col is about 2 hs. Fine views from the top of the Glac. de Miage, Aigs. de Trélatête, and Peuteret. Descent can be made in several directions,—either by paths or down the slopes, to the Lac de Combal in about 2½ hs. Return by the usual way down the Val Véni.

Of longer excursions, the finer ones are, to the summit of the Col du Géant; the ascent of the Aiguille du Géant; Mont Blanc by the Brenva Glacier; and the ascent of the Grandes Jorasses.

THE PAVILLON DU MONT FRÉTY.

The **summit of the Col du Géant**, 11,030 feet **(Cr. T. 15 or 20 frs.)**, is seen from Courmayeur above Mont Fréty. So far as the **Hotel** (or Pavillon) **du Mont Fréty**, 7129 feet, there is a mule-path; higher up there is a track nearly all the way to the Col. To the **Pavillon (Cr. T. 6 frs.)**[1], is a regular excursion; 2½ hs. coming up, 1½ hs. going down. The view from this place includes the Aig. du Géant, the Grandes Jorasses, and Grand Combin, but all can be seen to greater advantage elsewhere. From the Hotel to the summit of the Col takes about 3 h. 10 min., mainly over rocks (early and late in the season mingled with snow), easy to climb. There is a *cabane* at the top of these rocks, a few feet below the summit on the Italian side, which can be seen from Courmayeur and from the Mont Fréty Hotel, and forms a good object to steer to. It was

[1] This is not a nice place. Bring food from Courmayeur.

TABLET IN THE CABANE ON THE COL DU GÉANT.

erected in 1876, and has been subsequently extended. In Aug. 1888, H.M. the Queen of Italy slept at the Mont Fréty Hotel on the 15th, and started at 4 a.m. the next morning for the Col with 27 persons, under the leading of Henri Séraphin. Bad weather came on, and they were forced to pass the night in the *cabane*. On the 17th they returned to Courmayeur. The members of the Turin section of the Italian Alpine Club have commemorated this occurrence by placing a tablet in the *cabane*.

"The Col du Géant," says Mr. Leslie Stephen, "is and must always remain one of the first two or three, if not actually the first, in beauty of all Alpine passes. The partiality of new discoverers has set up rivals to it at one time or another; but its grandeur and variety are always fresh, and nowhere, in my knowledge, to be fairly equalled." This applies to the Pass as a whole. For the French side see pp. 119-120. The view on the Italian side is very extensive. The principal features seen from the *cabane* are the exceedingly jagged ridge between the Glacs. de la Brenva and de Fresnay, with the Aigs. de Peuteret; and the audacious pinnacle the Aig. du Géant.

The **Aig. Blanche de Peuteret**, 13,478 feet, is one of the principal points on the ridge descending towards S.E. from the Mont Blanc de Courmayeur. The name is of recent origin. It was first ascended by Sir H. Seymour King, with the guides Ambrose Supersax, Aloys Anthamatten(?) and Emile Rey, on July 31, 1885. (See pp. 58-9 for the death of Prof. Balfour.) The **Aig. Noire de Peuteret**, 12,392 feet **(Cr. T. 70 frs.)**, is a very fine pinnacle lower down the same ridge, and from some points is scarcely less imposing than the Aig. du Dru. It was formerly known as *the* Aig. de Péteret. The first ascent was

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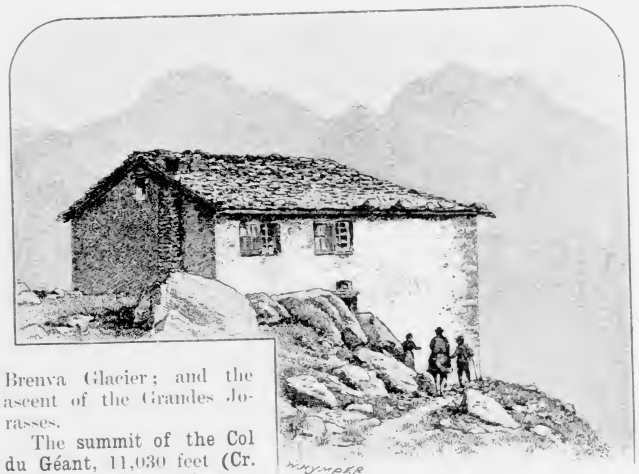

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The Aiguille (or Dent) du Géant, 13,156 feet (**Cx. T. 45, courses ext.; Cr. T. 70 irs.**). This peak, one of the most striking forms in the Chain of Mont Blanc, is situated about 1⅓ m. to the N.E. of the summit of the Col du Géant. It was first ascended by MM. Alessandro, Corradino, Alfonso (17 years old) and Gaudenzio Sella, with the guides J.-J. Maquignaz, B. Maquignaz and Daniel Maquignaz of Val Tournanche, on July 29, 1882. Before the ascent was made, the guides worked four days in mining the rock, and driving in iron stanchions to which ropes were attached. This party reached the *lower* of the two rocky teeth which form the summit, and left about 100 mètres of rope behind.

The *higher* of the two rocky teeth was ascended by Mr. W. W. Graham, with the guides Alphonse Payot and Auguste Cupelin of Chamonix, on Aug. 20, 1882. Mr. Graham said, after reaching the 'stone man' erected by the Sellas, "straight in front of us rose the other tooth, about 20 feet higher, separated from us by an extremely awkward notch. The most obvious line of descent was blocked by a huge loose slab which vibrated, and we consequently had to let ourselves down a vertical drop of about fifteen to twenty feet, and then found ourselves on the little *arête* between the two teeth. This was of rock topped with ice and gradually narrowed from a foot to a few inches. . . . We were compelled to bestride the *arête*."

The height of the loftier of these two teeth seems to have rapidly diminished. Mr. J. W. Hartley ascended both of them on July 4, 1883, and said, "We were much struck by the *very* small difference in height between the two peaks. We . . . estimated it at from 5 to 8 feet. . . The passage from one peak to the other we found this year quite the easiest part of the mountain."

The Aig. du Géant is perhaps one of the few pinnacles which it is impossible to ascend by fair climbing. In 1871, when regarding it from the summit of Mont Mallet, Mr. Leslie Stephen thought, "Nobody will ever get up that peak by fair means. Of course, it is impossible to say what may not be within the resources of the engineer's art; but without stooping to some of those artifices which the mountaineer regards with the horror aroused in regard to other pursuits by the epithet 'unsportsmanlike,' no one, I venture to say with unusual confidence, will ever climb the Dent du Géant."

The *cabane* on the Col du Géant is usually made the starting-point for this ascent, which has become an established excursion. By the kind permission of Sig. Vittorio Sella, I am able to give the accompanying illustration, shewing the routes which were taken by MM. Sella and by Mr. Graham. A is the highest point, and B the summit reached by Messrs. Sella. Where the routes separate in the *middle of the engraving*, the left hand one is that taken by Mr. Graham; and his is that which mounts directly underneath B. The left hand route *at the upper part* was that followed by Messrs. Sella. The arrow points out the direction of the Col du Géant.

Mont Blanc used to be ascended viâ **the Col du Géant and the Aig. du Midi** by a route which was struck out by Mr. Ramsay in 1855; but it is circuitous, and is now seldom traversed. It is marked by a faint track on the folding Map. The cabane at the foot of the Aig. du Midi is said to be uninhabitable.

There are three passes in the vicinity of the Col du Géant which have been discovered by Mr. J. Eccles. 1. The **Col de Rochefort,** between the Aig. du Géant and the Aigs. Marbrées, descending by the Glac. de Rochefort. This

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was first crossed, with the guides Michel and Alphonse Payot, on July 10, 1877. "We found," says Mr. Eccles, "no difficulty in the descent over the Glac. de Rochefort, and in 3¼ hours from the Col arrived at Courmayeur. I strongly recommend this Col as an alternative route to the Col du Géant." 2. The **Col des Flambeaux,** between the two Flambeaux nearest the Col du Géant, descending by the Glacier de Toule. Mr. Eccles informs me that he does not remember when this pass was made, and that he "never thought it worth counting as a new pass." 3. The **Col de Toule**, between the W. Flambeau and la Tour Ronde, descending by the Glac. de Toule.

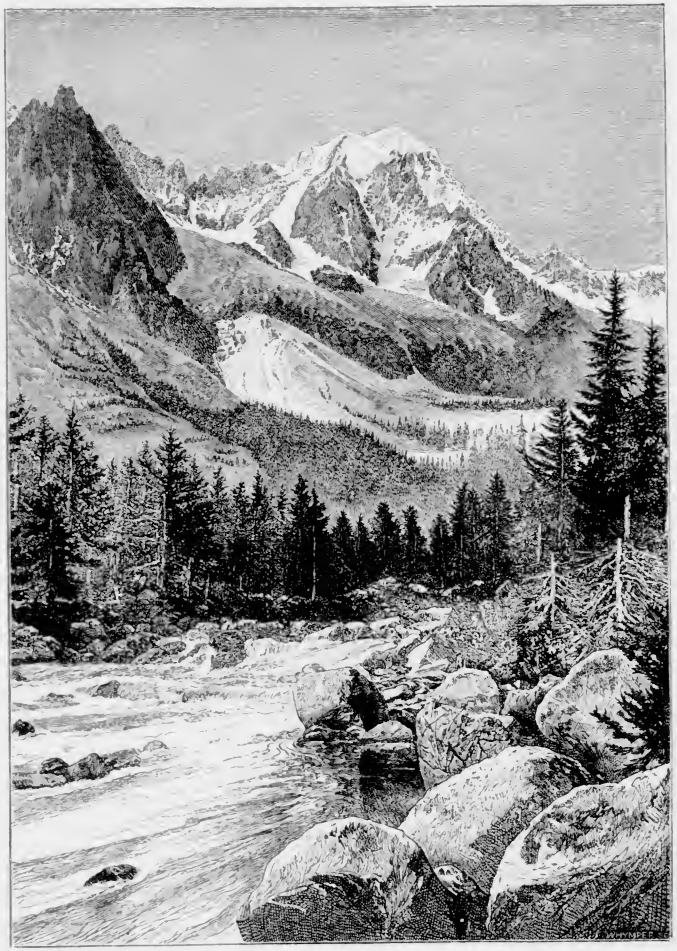
The **Ascent of Mont Blanc by the Brenva Glacier** is the most direct of all the routes up the mountain on the Italian side, but it is seldom taken, on account of its steepness and difficulty. The track of the first ascent by this route is given on the folding Map.

On July 15, 1865, "Messrs. G. S. Mathews, A. W. Moore, Frank and Horace Walker, with Melchior and Jakob Anderegg, left their bivouac on the left bank of the Glac. de Brenva, 5 hrs. from Courmayeur, at 2.45 a.m., and crossing the upper ice-fall of the glacier reached the base of a buttress which comes down at right-angles to the main mass of Mont Blanc at 5.30. Climbing the side of this buttress, they got, in 2 hrs., on to the very sharp ice *arête* forming its crest, and followed it for 1½ hrs. until it merged in steep slopes of broken névé, which they ascended for 3 hrs. more. Then, bearing to the right, they reached the Corridor at 1.20, the top of Mont Blanc at 3.10, and Chamouni, by the usual route, at 10.30 p.m. Total actual walking, 17½ hrs. It is proposed to call the pass thus made **Col de Brenva**." *Alpine Journal*, vol. ii, p. 132.

The Ascent of the Grandes Jorasses, 13,800, 13,767 feet (Cr. T. 70 frs.). Having seen from a photograph taken near the top of Mont Blanc that the summit of the Grandes Jorasses was accessible on the Italian side, I went up Mont Saxe to trace a route over the lower part of the mountain; and on June 24, 1865, started from Courmayeur at 1.35 a.m., with Michel Croz, Christian Almer, and Franz Biener, and ascended the Val Ferret nearly as far as the village of Neiron. After passing through forest, succeeded by some highly-glaciated rocks, we made for the middle of the Glacier des Grandes Jorasses; and, traversing an island of rock (*rognon*) in its midst,[1] ascended the ice for some distance farther, towards the N.W., and then turned due N., towards the summit; and mounted sometimes by crevassed glacier, and sometimes by rocks on its left. The summit of the more western of the two highest points was reached at 1 p.m. by the *arête* of a ridge descending towards Courmayeur. We returned to Courmayeur at 8.45 p.m. In descending

"At first we followed the little ridge shewn upon the accompanying engraving, leading from our summit towards the spectator, and then took to the head of the corridor of glacier on its left, which in the view is left perfectly white. The slopes were steep and covered with new-fallen snow, flour-like and evil to tread upon. On the ascent we had reviled it, and had made our staircase with much caution, knowing full well that the disturbance of its base would bring down all that was above. In descending, the bolder spirits counselled trusting to luck and a glissade; the cautious ones advocated avoiding the slopes and crossing to the rocks on their farther side. The advice of

1 On the Italian Govt. Map confusion has been produced here and elsewhere by changing the nomenclature in common use. The Glac. des Grandes Jorasses as a name has disappeared, and the portion of it to the West of the *rognon* is called G. di Planpansière, and that on the East G. di Pra Sec.



THE GRANDES JORASSES, FROM THE ITALIAN VAL FERRET.

was first crossed, with the guides Michel and Alphonse Payot, on July 10, 1877. "We found," says Mr. Eccles, "no difficulty in the descent over the Glac. de Rochefort, and in 3¼ hours from the Col arrived at Courmayeur. I strongly recommend this Col as an alternative route to the Col du Géant." 2. The **Col des Flambeaux**, between the two Flambeaux nearest the Col du Géant, descending by the Glacier de Toule. Mr. Eccles informs me that he does not remember when this pass was made, and that he "never thought it worth counting as a new pass." 3. The **Col de Toule**, between the W. Flambeau and la Tour Ronde, descending by the Glac. de Toule.

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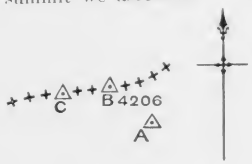
THE GRANDES JORASSES, FROM THE ITALIAN VAL FERRET.

the latter prevailed, and we had half-traversed the snow, to gain the ridge, when the crust slipped and we went along with it. 'Halt!' broke from all four, unanimously. The axe-heads flew round as we started on this involuntary glissade. It was useless, they slid over the underlying ice fruitlessly. 'Halt!' thundered Croz, as he dashed his weapon in again with superhuman energy. No halt could be made, and we slid down slowly, but with accelerating motion, driving up waves of snow in front, with streams of the nasty stuff hissing all around. Luckily, the slope eased off at one place, the leading men cleverly jumped aside out of the moving snow, we others followed, and the young avalanche which we had started, continuing to pour down, fell into a yawning crevasse, and shewed us where our grave would have been if we had remained in its company five seconds longer. The whole affair did not occupy half-a-minute. It was the solitary incident of a long day, and at nightfall we re-entered the excellent house kept by the courteous Bertolini, well satisfied that we had not met with more incidents of a similar description."[1] *Scrambles amongst the Alps*, chap. xvi.

The Grandes Jorasses has three summits, which are marked A, B, C upon the annexed diagram. To B, Capt. Mieulet assigns the height 4206 mètres. The other two summits are marked by him with red triangles, but no heights are given to them. It seems probable that he regarded both lower than the one that he measured. B was the summit we ascended.



The point A lies to E.S.E. of B, and cannot be seen from the Montanvert and Mer de Glace. This is the true summit of the mountain, and is well seen from the Italian Val Ferret, near Entrèves. On the Ital. Govt. Map A is marked 4205 mètres, B 4196 mètres, and C 4066 mètres.[2] Mieulet drew his frontier line in the manner shewn in my diagram, and *excluded* the highest point of the Grandes Jorasses. On the Italian Map the frontier line is carried *through* the highest point.

Courmayeur to Orsières (or Champey) by the Col Ferret.—There are two passes called Ferret, which are marked upon the folding Map No. 1 and No. 2. No. 1, 8176 feet, is called on the Ital. Govt. Map **Pas de Grapillon or Little Ferret**, and upon the Siegfried (Swiss) Map **le Chantonet**. No. 2, 8320 feet, is named **Col de Ferret** on the Ital. Map, and **Col Ferret** on the Siegfried Map. To reach the summit of either will take about 5¼ hs. from Courmayeur. From the top of No. 1 one can descend either to the hamlet **la Folly**, or by another path to **le Clou**. From the top of No. 2 the path leads

[1] On Aug. 7, 1893, a similar incident occurred on the same spot, with unfortunate results. See *Alpine Journal*, vol. xvi, pp. 502-3.

[2] As the difference in elevation of A B is slight (according to the Ital. Map, only 9 mètres), B conceals the basin of the Mer de Glace from A. On this account we ascended B, and did not go on A, though one could have passed from one to the other. Notwithstanding my invasion of their territory with two Swiss and one French guide, I was received by the guides of Courmayeur, upon my return, with great cordiality. Two days afterwards, five of them (headed by Julien Grange) set out, at my recommendation, to learn the way to the summit while the track was still fresh. The point A was ascended on June 29-30, 1868, by Mr. Horace Walker, with Julien Grange, M. Anderegg, and J. Jaun.

A *cabane* has been erected on the *rognon*, about 5 hs. from Courmayeur, and excursions are frequently made to it (**Cr. T. 15 frs., one day; 20 frs., two days**).

past the châlets of **la Peulaz** into the Valley of the Dranse, and crosses that stream by a bridge 1½ kils. *above* the Châlets de Ferret. No. 2 is the route to be preferred, as food can be obtained at the **Châlets de Ferret**, 5565 feet, RESTAURANT FERRET (5 beds); but on the other route food cannot be relied upon between Courmayeur and Praz de Fort.

A good char road leads from Courmayeur to la Vachey, passing through the villages of Neyron and Praz Sec. After Gruetta the way becomes steeper, but the ground is easy, and a way readily found over either pass, even if the path should be missed. The route for each Col passes the châlets of **Pré de Bar**, 6759 feet.

[At Gruetta the Doire is crossed for the Cols Triolet and Talèfre. A hut (**Cabane de Triolet**), 8477 feet, has been erected by the Turin Sec. of the Ital. Alpine Club on the left bank of the Glac. de Triolet at the foot of Mont Rouge, for the use of persons crossing those passes, and excursions are made to it from Courmayeur (**Cr. T. 15 frs., one day; 20 frs., two days**).

The Châlets of Pré de Bar (from Courmayeur 4 hs. ascending, 3½ hs. descending) are used as a starting-point for the **Ascent of Mont Dolent**, 12,566 feet (**Cr. T. 40 frs.**), a peak which occupies a commanding position at the junction of several ridges. This induced Mr. Adams-Reilly and myself to ascend it on July 9, 1864, for the purposes of his map. Leaving Pré de Bar at 4.15 a.m., we went nearly to the top of Col. Ferret No. 1, and thence up the left bank of the Glac. du Mont Dolent. The upper part of this is a nearly level plateau. The *bergschrund* at the foot of the peak was crossed at 9.20, and the summit gained at 11 a.m. The route is marked on the folding Map.

"This was a miniature ascent. It contained a little of everything. First we went up to the Col Ferret No. 1, and had a little grind over shaly banks; then there was a little walk over grass; then a little tramp over a moraine (which, strange to say, gave a pleasant path); then a little zigzagging over the snow-covered glacier of Mont Dolent. Then there was a little bergschrund; then a little wall of snow,—which we mounted by the side of a little buttress; and when we struck the ridge descending S.E. from the summit, we found a little *arête* of snow leading to the highest point. The summit itself was little,—very small indeed; it was the loveliest little cone of snow that was ever piled up on mountain-top; so soft, so pure; it seemed a crime to defile it; it was a miniature Jungfrau, a toy summit, you could cover it with the hand." *Scrambles amongst the Alps*, chap. xi.

"Situated at the junction of three mountain ridges, it rises in a positive steeple far above anything in its immediate neighbourhood; and certain gaps in the surrounding ridges, which seem contrived for that especial purpose, extend the view in almost every direction. The precipices which descend to the Glacier d'Argentière I can only compare to those of the Jungfrau, and the ridges on both sides of that glacier, especially the steep rocks of les Droites and les Courtes, surmounted by the sharp snow-peak of the Aiguille Verte, have almost the effect of the Grandes Jorasses. Then, framed, as it were, between the massive tower of the Aiguille de Triolet and the more distant Jorasses, lies, without exception, the most delicately beautiful picture I have ever seen—the whole *massif* of Mont Blanc, raising its great head of snow far above the tangled series of flying buttresses which uphold the Monts Maudits, supported on the left by Mont Peuteret and by the mass of ragged aiguilles which overhang the Brenva. This aspect of Mont Blanc is not new, but from this point its *pose* is unrivalled, and it has all the superiority of a picture grouped by the hand of a master." *Reilly.*]

Between Courmayeur and the Cols Ferret there are a number of interesting views as one passes successively the Glacs. de Rochefort, des Grandes Jorasses, Freboutzie, Triolet and Mont Dolent, and they

are equally good upon the other side, while descending the Swiss Val Ferret; but in each case one is too much *under the peaks* to appreciate them. A fine view of the Mont Dolent and Tour Noire can be obtained by mounting the slopes, for a thousand feet or so, on the east of the châlets of Ferret; and, lower down the valley, by diverging from the road for a few hundred feet, admirable glimpses can be obtained of the glaciers at this end of the Chain.

There is a char road (on the whole good, though sometimes rough) down the Swiss Val Ferret, which leads in 2¼ hs. from the châlets de Ferret to Orsières through la Folly, Praz de Fort, and Som la Proz. The times *ascending* will be about these.

	h.	min.
Orsières to Som la Proz		20
Som la Proz to Ville d'Issert		23
Ville d'Issert to Praz de Fort		22
Praz de Fort to Praillon	1	
Praillon to l'Amône		20
l'Amône to la Folly		15
la Folly to Châlets of Ferret		25
Châlets de Ferret to Pré de Bar	2	50

[From Praz de Fort there is a path to the **Cabane de Saleinoz**, 5341 feet, at the foot of the Saleinoz Glac. The following little ascents (and various others) are made from this place. The **Portalet**, 10,991 ft.; **Pointe des Plines**, 10,056 ft.; **Grande Fourche**, 11,867 ft.; **Darreï**, 11,605 ft.; **Pointe de Planereuse**, 10,335 ft. (on the S. side of the Glac. de Saleinoz). An excursion can be made hence *across country* to the **Cabane d'Orny**, 8832 ft., in the Combe d'Orny, at the foot of the glacier of the same name. This is another *cabane* which is in much favour with the members of the Swiss Alpine Club. It can be reached by paths either from Som la Proz, or from Champey. Numerous little excursions can be made from it in the basins of the Glacs. d'Orny and du Trient, and in the Vallée d'Arpette.]

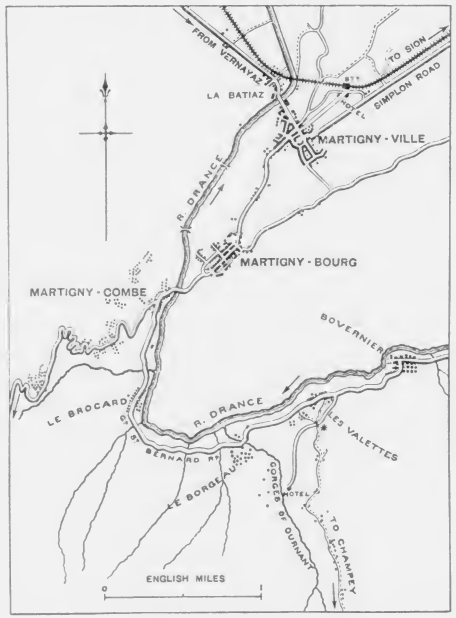
Orsières, 2920 feet; Pop. 2185; HOTEL DES ALPES, reasonable prices. Guides, Bisselx François, Capt. Joseph, Crettex Maurice, Crettex Onésime, Joris Alfred. For the glacier routes to this place from the Valley of Chamonix see Chap. XII. Orsières is on the Great St. Bernard Road. Courrier several times a day to Martigny, 22 kils. It is not a sweet place. The odours of Orsières must be smelt to be appreciated.

Orsières to Chamonix by the Gt. St. Bernard Road and the Col de la Forclaz.—There are two ways which may be taken. 1. By the Gt. St. Bernard Road, to Sembrancher, Bovernier, and le Brocard. This is the shortest in time. 2. By Champey, to les Valettes, and le Brocard. This is the most interesting. If the former of these two routes is followed, you will have a walk down a very fine road, descending gently all the way to le Brocard. Time 3 hs.

Champey (Champex), 4807 feet; HOTEL PENSION DU LAC; PENSION DANIEL CRETTEZ; HOTEL PENSION EMILE CRETTEZ; HOTEL PENSION BISELX, is a place which is rapidly rising in public estimation. Hitherto not much visited by English. The Hotels are upon the N.E. side of the Lake, close to the water, which is exquisitely clear. The Lake is about ½ kil. across (Boating and Bathing), and is surrounded by forest coming down to the water's edge. The beauty

and quietude of this spot will continue to attract increasing numbers. Many of the excursions which are made from the Cabane d'Orny can be made more advantageously from Champey. The village is 1 to 2 kils. from the Lake.

From Champey to les Valettes on the Gt. St. Bernard road there is a mule-path, rough in places, which at first leads through forest



PLAN OF MARTIGNY, ETC.

and the village of Champey, then along undulating mountain side, and finishes by a steep descent into the Valley of the Drance. Time about 2¼ hs. From les Valettes to le Brocard, 20 min. Coming in the reverse direction, a pedestrian bound for Champey is liable to be gulled by a road going to the **Gorges of Durnant**. This deceitful road comes to a sudden termination about ¾ m. from les Valettes at a little hotel, and you find that a franc has to be paid to go forward, or you are compelled to retrace your steps. The real path to Champey turns off to the left from this road a few minutes after leaving les Valettes. See Plan of Martigny, etc. Time, les Valettes to Champey,

2 hs. 40 min. There is a steep char road from Orsières to Champey (rather more than 2 hs.). From Champey to Orsières, by cutting the road, a pedestrian can go in less than 40 min.

[At le Brocard, 1755 ft., if bound for Martigny, continue along the St. Bernard Road. **Martigny,** 1539 ft.; GRAND HOTEL DU MONT BLANC; HOTEL CLERC; HOTEL DE L'AIGLE; HOTEL NATIONAL (all close to one another in Martigny-Ville, 5 min. from Railway Stn.); HOTEL DU GRAND ST. BERNARD (at the Railway Stn.); is made up of Martigny-Ville, Martigny-Bourg, Martigny-Combe, and la Batiaz. Total pop. 4731. Trains up the Rhone Valley to Sion, Sierre, Visp and Brieg, and in the contrary direction to Vernayaz, St. Maurice, Lausanne, Geneva, etc.]

The traveller bound for Chamonix will not go to Martigny, and will quit the Gd. St. Bernard road at le Brocard for the road to the Col de la Forclaz. In the middle of the day, in summer, this is a notoriously warm 3000 feet to ascend; although the road is (as the writer quoted upon p. 109 says) 'perfectly well-entertained,' and to some extent is in shade. The view *looking back* up the Rhone Valley is a great sight. At a number of places, a pedestrian can save time by cutting the zigzags. On summit of **Col de la Forclaz,** 4997 feet, HOTEL AND PENSION DESCOMBES; HOTEL-PENSION DE LA FLÉGÈRE. Thence in a short half-hour one can get to the bottom of the Valley of Trient, and turn either *right* for the Tête Noire, or (somewhat sooner) *left* for the Col de Balme, and by either way get to Chamonix on foot within 5 hs. See pp. 108-110.

The time has come to leave Chamonix—you leave it with regret, but go you must! and the question is, How to get away? If you came by Annemasse, *return by Salvan.* Start early; for, after the 3¼ hs. walk to Châtelard *viâ* Argentière and the Col des Montets, it is 3½ hs. or so more, through Finhaut (Fins Hauts), Triquent, and Salvan to Vernayaz in the Rhone Valley **(Cx. T., 49-52),** where you will take train,—and there is much to be seen. One kil. after Châtelard, 3681 ft., the road commences to rise steeply, and speedily gets high above the level of the Tête Noire Road, which is on the other side of the stream, here called the Eau Noire. This joins the torrent from the Trient Glac. just below the Tête Noire Hotel, near 'the Mysterious Bridge.' After rising to 4387 feet, it descends on **Finhaut,** 4088 ft.; pop. 401; shops, post and tel.; HOTEL DE FINHAUT; HOTEL-PENSION DU MONT BLANC; HOTEL-PENSION BEAU-SÉJOUR; HOTEL-PENSION BEL-OISEAU; HOTEL-PENSION DU PERRON; CHALET SUISSE PENSION; A LA CROIX FÉDERALE, RESTAURANT AND PENSION. Just before arriving at Finhaut there is a fine view of the Glac. du Trient, PENSION DU GLACIER DU TRIENT. From Finhaut to Triquent the road descends (at one part steep zigzags, where a pedestrian can gain considerably on a carriage). **Triquent,** 3353 feet; PENSION DE LA DENT DU MIDI; PENSION DU MONT ROSE (pension from 3 fr. 50). On the N. side of this village there are the **Gorges of the Triège,** a small stream which falls into the Trient. Admission 1 fr. Ten min. beyond this you come to **Medetta,** 3389 ft.; PENSION DE LA CREUSA; and a little farther on at **Marecotte** there is the PENSION DE L'ESPERANCE. The road now

descends on **Salvan,** 3035 ft.; pop. 1829; GRAND HOTEL DE SALVAN; PENSION DE L'UNION; HOTEL-PENSION DE SALVAN AND DES GORGES DE TRIÈGE; HOTEL BELLEVUE; RESTAURANT DES ALPES. This beautiful neighbourhood has attracted increasing numbers of visitors in recent years (mainly French and Swiss), and is developing more rapidly than any other in the Mont Blanc district. Between Châtelard —Salvan the road is open to improvement, and the traveller will sometimes consider it prudent to descend from his carriage, and walk, even if he should not be invited to do so by his *voiturier.* But from Salvan to Vernayaz it is unexceptionable. In a quarter of an hour it commences a steep descent into the Valley of the Rhone, and becomes one of the most delightful roads to be found anywhere;—winding to and fro amongst rocks, shaded by Walnuts and Chestnuts, Beech, Birch and Firs, crossing and re-crossing sparkling brooks. Read Javelle's *Légendes* in *Souvenirs d'un Alpiniste* under the Chestnuts, and then saunter down the 49 zigzags to Vernayaz, 1509 ft. (40 min. from Salvan); turn to the right, at the high-road, for the Gorges of Trient; and, reposing in the cool shade of the cliffs, learn (from his *Impressions de Voyage*) why Dumas went fishing for trout at midnight with the lad who was bullied by his mistress, and how he supped upon the *bifteck* of Bear at Martigny. Lunch or dine at the GRAND HOTEL DES GORGES DU TRIENT (good hotel, 2 min. from the Gorges and 10 min. from the R. Stat.; omnibus), and then take train at Vernayaz-Salvan, HOTEL DE LA GARE (against the Station); and watch *the* Lake glittering in afternoon light as you pass the massive towers of Chillon, and flit along the vine-clad slopes of sunny Vaud; catch glimpses of the snow-clad peaks through distant vistas in the mountains of Faucigny, —never-forgotten, undying souvenirs of le Grand Mont Blanc.

APPENDIX.

'TARIF' OF THE "SOCIÉTÉ DES VOITURES DE CHAMONIX."

	Going. Francs.	Going and returning. Francs.
To Martigny or Vernayaz by the Tête Noire.		
For four persons with two horses	65	110
For three persons with two horses	55	90
For two persons with two horses	45	75
For one person with two horses	45	70
Extra, for Vernayaz	5	...
Extra, "si l'on couche en route"[1]	15	...
Extra, "chaque sejour à Martigny"[2]	20	...
To Vernayaz viâ Salvan.[3]		
For one or two persons with one horse	45	70
To Fins Hauts.[3]		
For one or two persons with one horse	30	40
To Trient.		
For four persons with two horses	45	50
For three persons with two horses	40	45
For one or two persons with two horses	35	40
To the Tête Noire.		
For four persons with two horses	40	45
For three persons with two horses	35	40
For one or two persons with two horses	30	35
To Barberine or Châtelard.		
For three or four persons with two horses	30	35
For one or two persons with two horses	25	30
To the Cascade de Bérard.		
For three or four persons with two horses	20	...
For one or two persons with two horses	15	...
To Trélechamp.		
For three, four, or five persons with two horses	14	16
For one or two persons with one horse	10	12

[1] [2] Enquiry should be made as to the manner in which these phrases may be interpreted.
[3] It is necessary to walk on certain parts of the route. Not suitable for invalids.

	Going. Francs.	Going and returning. Francs.
To Argentière.		
For five persons with two horses	12	14
For four persons with two horses	10	12
For three persons with one horse	8	10
For one or two persons with one or two horses	7	9
Waiting at Argentière return from the Tête Noire.		
For five persons with two horses	20	...
For four persons with two horses	18	...
For three persons with one horse	12	...
For one or two persons with one horse	10	...
To the Village of le Tour.		
For four or five persons with two horses	17	19
For one, two, or three persons with two horses	15	17
To Chosalets (Chauzalet), and waiting return from Lognan.[1]		
For four or five persons with two horses	12	20
For one, two, or three persons with one horse	8	12
To les Tines, the Arveyron, or les Bossons.		
For four or five persons with two horses	8	10
For one, two, or three persons with one horse	6	8
To the foot of the Flégère.		
For four or five persons with two horses	8	...
For one, two, or three persons with one horse	6	...
To les Houches.		
For four or five persons with two horses	10	12
For one, two, or three persons with one horse	8	10
To Servoz.		
For four or five persons with two horses	15	17
For one, two, or three persons with one horse	10	12
To St. Gervais les Bains.		
For four or five persons with two horses	22	30
For one, two, or three persons with one horse	16	20
To the Village of St. Gervais.		
For four or five persons with two horses	25	34
For one, two, or three persons with one horse	18	20
To Contamines.		
For two horses[2]	35	45
To Sallanches.		
For four or five persons with two horses	25	34
For one, two, or three persons with one horse	18	24

[1] The length of the stoppage should be arranged beforehand.
[2] The 'tarif' does not state what number of persons will be conveyed at these rates.

The Chamonix 'Tarif des Courses.'[1]

		Frs.	Cts.
1.	To the **Glacier des Bossons**, either returning the same way or by the Cascades du Dard and des Pélerins	6	..
2.	To the **Cascades du Dard and des Pélerins**	5	..
3.	To the **Source of the Arveyron**	5	..
4.	Extra for any of these excursions added to another in the course of the same day	4	..
5.	To the **Montanvert**, returning the same way	6	..
6.	To the **Montanvert** and visit to the **Mer de Glace**, returning the same way	7	..
7.	To the **Croix de Flégère**, returning the same way	7	..
8.	To **Planpraz**	7	..
9.	To **Planpraz**, returning by the **Croix de Flégère**, or *vice-versa*	9	..
10.	To the **Brévent** *viâ* **Planpraz**	10	..
11.	To the **Brévent** *viâ* the **Croix de Flégère**, and descending by **Planpraz**, or *vice-versa*	12	..
12.	To the **Montanvert**, across the **Mer de Glace** to the **Chapeau**, and to the **Croix de Flégère**, or *vice-versa*	12	..
13.	Excursion No. 12, including the **Ascent of the Brévent**	16	..
14.	Ascent of the **Aiguille de la Floria**, *viâ* **la Flégère**	20	..
15.	Ascent of the **Aiguille de la Glière**, do.	15	..
16.	To the **Montanvert** or the **Flégère**, and to the **Glacier des Bossons**, or the **Cascades**, in one day	10	..
17.	To the **Plan des Aiguilles**	9	..
18.	To the **Plan des Aiguilles**, returning either *viâ* the **Montanvert** or by **la Pierre à l'Echelle**	10	..
19.	To the **Pierre à l'Echelle** and the **Montanvert** by the **Plan des Aiguilles**, or *vice-versa*	12	..
20.	To the **Pierre Pointue**	8	..
21.	To the **Pierre à l'Echelle**	9	..
22.	Visit to the **Glacier des Bossons** joined to excursion to the **Pierre Pointue**, extra	3	..
23.	To the **Jardin**, returning, if wished, by the **Chapeau**	14	..
24.	The same, sleeping the night before at the **Montanvert**	16	..
25.	To the foot of the *séracs* of the **Col du Géant**	12	..
26.	To the '**Moulin**' of the **Mer de Glace**, or to the **Tacul**	9	..
	The same, descending *viâ* the **Chapeau**	12	..
27.	To the **Montanvert** and across the **Mer de Glace**, whether returning the same way or not	9	..
28.	To the **Plan des Aiguilles** and **Pierre Pointue**, or *vice-versa*	10	..

[1] It is to be understood that the prices mentioned are for each Guide taken, that is to say per Guide.
The numbers attached to the excursions correspond with the numbering in the Official List.

		Frs.	Cts.
29.	To the **Montanvert**, and to the **Flégère** or **Planpraz**, or *vice-versa*	10	..
30.	To the **Chapeau**, and to the **Flégère** or **Planpraz**, or *vice-versa*	10	..
31.	To the village of **Argentière**, and visit to the **Glacier**, and to **Trélechamp**	6	..
32.	To the Mer de Glace of the **Glacier d'Argentière**	8	..
33.	To the bottom of the **Glacier d'Argentière**, in one day	12	..
34.	The same, in two days	18	..
35.	To the **Col de Balme** and back	8	..
36.	The same, returning by the **Tête Noire**, or *vice-versa*, in one day	10	..
37.	The same, in two days	12	..
38.	The same, descending on **Barberine**, and visit to the **Cascades of Barberine and Bérard**, in one day	10	..
39.	The same, in two days	12	..
40.	Ascent of the **Buet**, *viâ* **la Pierre à Bérard**, in one day	15	..
41.	The same, with choice of return by **Villy** and the **Brévent**	20	..
42.	**Ascent of the Buet**, descending on **Sixt**, in one day	15	..
43.	The same, in two days	20	..
44.	Return of Guide to Chamonix, extra	8	..
45.	Ascent of the **Buet**, descending to **Martigny**, return of Guide included (two or three days)	26	..
46.	Each additional day	6	..
47.	To **Martigny**, either by the **Col de Balme** or by the **Tête Noire**, return of Guide included	12	..
48.	The same, and visit to the **Cascade of Bérard** or of **Barberine**, each extra	1	..
49.	To **Vernayaz** *viâ* **Fins Hauts** and **Salvan**, return of Guide included	12	..
50.	The same, going on to **Martigny**	14	..
51.	The same in two days, if arriving at **Martigny** or **Vernayaz** before mid-day, return of Guide included	15	..
52.	The same, if arriving at **Vernayaz** or **Martigny** after mid-day	18	..
53.	To the **Cascade of Bérard**, or that of **Barberine**	6	..
54.	Visit to the two Cascades	7	..
55.	To the **Tête Noire**, *viâ* **les Montets**, and back	8	..
56.	The same, in two days	12	..
60.	By the **Col de Balme**, descending on the **Tête Noire**, to go to **Vernayaz**, *viâ* **Fins Hauts** and **Salvan**	16	..
61.	The same, in two days, arriving before mid-day at **Vernayaz**	18	..
62.	The same, in two days, arriving after mid-day	23	..
63.	To **Sixt**, *viâ* the **Brévent** and the **Col d'Anterne**, or that of **Léchaud**, return of Guide included	18	..
64.	The same, sleeping at **Planpraz**, **Villy**, or **Bel Achat**	22	..
65.	The same, *viâ* **Servoz**	18	..
66.	The same, *viâ* **le Dérochoir** or **Platey**, return of Guide included, in one day	18	..
67.	The same, sleeping at **Servoz** or at **Chède**	20	..
68.	To **Sixt** by the **Col de Tenneverges**, sleeping at **Barberine**, return of Guide included	25	..
70.	To the **Pavillon de Bellevue**, the **Col de Voza**, or **Prarion**	8	..

	Frs.	Cts.
71. The same, returning by **St. Gervais** and **Servoz**, or by the **Col de la Forclaz**, in one day	10	..
72. The same, in two days	12	..
73. **Ascent of Mont Joli**, *viâ* **St. Gervais** or **Contamines**, in two days, return of Guide included	15	..
74. The same, in three days	18	..
75. To **Courmayeur**, *viâ* the **Pavillon de Bellevue** (or by **St. Gervais**), and by the **Cols du Bonhomme, des Fours**, and **de la Seigne**, in two days	20	..
76. The same, in three days	24	..
77. Return of Guide, extra	16	..
78. From **Courmayeur** by the **Col Ferret** to **Martigny**	10	..
79. Return of Guide from **Martigny** to **Chamonix**	6	..
80. To **Contamines** by the **Col du Tricot**	15	..
82. To **Vernayaz**, *viâ* the **Tête Noire**, including return, in one day	14	..
83. The same, in two days	18	..
84. To the **Chapeau**	6	..
85. The same, uniting visit to the **Croix de Flégère**	10	..
89. Ascent of the **Brévent**, *viâ* **Bel Achat**	10	..
93. To **Lognan**, from **Argentière**	7	..
94. The same, up to the edge of the Glacier	8	..
95. The same, including crossing the Glacier, or to within sight of the bottom of the Glacier	10	..
96. The same excursion, if made from Chamonix, extra	3	..
97. To **Sixt**, *viâ* **Bel Achat**	18	..
99. To the top of the **Montagne de la Côte**	15	..
100. To the **Col de Balme**, by the **Montanvert** and the **Mer de Glace**, or *viâ* the **Flégère**, in one day, returning to Chamonix same evening	13	..
101. The same, in two days	15	..
107. To the **Gorges of Diosaz**	6	..
108. To the '**jonction**' **des Glaciers des Bossons and de Tacconaz**	12	..
109. To the **Col d'Anterne** and back	13	..

"Courses Extraordinaires."

1. The **Ascent of Mont Blanc**, either *viâ* the **Grands Mulets** or by the **Aiguille du Goûter**	100	..
2. If one does not upon this ascent get farther than the **Grands Mulets**, in one day	20	..
3. The same, in two days	30	..
4. If one gets only to the **Grand Plateau**	50	..
do. do. **Dôme du Goûter**	60	..
5. If one gets only to the top of '**the Corridor**,' or the top of the **Bosses du Dromadaire**	70	..
6. Higher than these points, or if one gets to the top of the **Mur de la Côte**, the full tarif price (100 francs) may be exacted ('est exigible')	..	..

	Frs.	Cts.
7. If the **Ascent of Mont Blanc** occupies more than three days, each Guide must be paid extra, per day	10	..
8. Ascent of the **Aiguille du Goûter** *viâ* the **Pavillon de Bellevue**	30	..
9. Ascent of the **Aiguille du Goûter** *viâ* the **Grands Mulets**	40	..
10. To the **Grand Plateau**, or the **Ascent of the Dôme du Goûter**, either *viâ* the **Grands Mulets** or *viâ* the **Cabane de l'Aiguille du Goûter**, including stoppage ('avec séjour') at one or other of these places, or *vice-versâ*[1]	50	..
11. La même sans séjour[2]	40	..
13. To **Courmayeur** *viâ* the **Grands Mulets**, the **Aiguille du Midi**, and the **Col du Géant**[2]	70	..
14. To **Courmayeur** by the **Col du Géant**, or to **Orsières** by the **Cols du Chardonnet, du Triolet**, for each Col[3]	50	..
15. To the **Col du Géant** and back to **Chamonix**	40	..
16. To the **Col du Chardonnet** and back to **Chamonix**	30	..
17. The same, returning by the **Col du Tour** *viâ* the **Fenêtre de Saleinoz** (**Salène**), or *vice-versâ*	40	..
18. To the **Col de Triolet** and back to **Chamonix**	40	..
19. To **Orsières** by the **Col d'Argentière**, and to the **Allée Blanche** by the **Col de Miage**, each excursion	60	..
20. To the **Col d'Argentière** and back to **Chamonix**	30	..
21. To the **Col de Miage** and back to **Chamonix**	10	..
22. To the **Col Pierre Joseph** and back	40	..
23. To **Orsières** by the **Col Pierre Joseph**[4]	40	..
24. By the **Col du Tour** to the **Val Ferret**	40	..
25. By the **Col du Mont Tondu** to **les Motets**	30	..
26. By the **Col de Trélatête** to **Courmayeur**	60	..
27. By the **Col de la Brenva** to **Courmayeur**	80	..
28. To the **Col des Grands Montets** and back to **Chamonix** by the **Glacier du Nant Blanc**	20	..
29. The same excursion, in two days	25	..
30. The same excursion, returning by the **Glacier d'Argentière**	30	..
31. A diminution of 10 francs will be made upon each 'grand Col' to tourists who, after having made excursions to one or more of the above-named 'grands Cols,' wish to retain their Guide for a journey	..	..
32. The Ascent of the **Aiguille Verte**	100	..
33. The Ascent of the **Aiguilles Rouges**	20	..
34. The Ascent of the **Aiguille d'Argentière**	65	..
35. The Ascent of the **Aiguille du Chardonnet**	65	..
36. The Ascent of the **Aiguille du Midi**	60	..
37. The Ascent of the **Aiguille du Tour**	50	..
38. The Ascent of the **Aiguille de Bionnassay**	70	..
39. The Ascent of the **Grandes Jorasses**	80	..
40. The Ascent of the **Tour Ronde**	65	..

[1] Enquiry should be made respecting the meaning of 'avec séjour.'

[2] This requires explanation.

[3] The Col de Triolet (not *du* Triolet) leads to Courmayeur, and not to Orsières.

[4] The Col Pierre Joseph does not lead to Orsières.

	Frs.	Cts.
41. For all Glacier excursions in the Chain of Mont Blanc above the limit of vegetation (au-dessus de la végétation), per day	10	..
42. By the **Col des Hirondelles** to **Courmayeur**	60	..
43. Ascent of the **Aiguille de Blaitière**	80	..
44. Ascent of the **Aiguilles des Charmoz**	80	..
45. Ascent of the **Aiguille du Géant**	100	..
46. Ascent of the **Aiguille du Moine**	35	..
47. Ascent of the **Aiguille du Tacul**	35	..
48. Ascent of the **Aiguille du Dru, pointe Charlet**	130	..
49. Ascent of the **Aiguille du Dru, pointe Est**	90	..
50. Excursion to the **Col des Courtes**, side of the **Jardin**	30	..

Tarif des Porteurs.

For 'chaises à porteur' the tarif is the same as for Guides.
The load of each Porter must not exceed 25 kilos.

	10	..
1. To the **Jardin**	12	..
2. do. sleeping at the **Montanvert**	10	..
3. Ascent of the **Buet**, in one day	12	..
4. do. do. sleeping at **la Pierre à Bérard** or at **Villy**		

Courses Extraordinaires.

The weight of the load of each Porter upon 'courses extraordinaires' must not exceed 15 kilos., and upon the **Ascent of Mont Blanc** it must not exceed 10 kilos. above the **Grand Plateau.**

1. To the **Grands Mulets**, in one day	12	..
2. do. do. in two days	15	..
3. To the **Grand Plateau** *viâ* the **Grands Mulets**, or to the **Dôme du Goûter** *viâ* the **Aiguille du Goûter**	30	..
4. To the top of the **Corridor**, or the **Bosses du Dromadaire**	35	..
5. To the summit of **Mont Blanc**	50	..
6. To the **Cabane of the Aiguille du Goûter**, *viâ* the **Col de Voza**	15	..
7. The same, in two days	20	..
8. To the top of the **Col du Géant** and back to **Chamonix**	20	..
9. Ascent of the **Aiguille Verte**	50	..
10. Over the **Col du Géant** to **Courmayeur**, return included	30	..
11. Over the **Col du Tour**	25	..
12. To the top of the **Col du Tour**, and back to **Chamonix**	15	..
13. For the other 'grands Cols,' when the tariff for Guides is 50 francs and upwards, each Porter	30	..
14. Or, when the tariff for Guides is less than 50 francs, each Porter	25	..
Exceptions.		
15. The **Col du Mont Tondu**	20	..
16. The **Col des Grands Montets**	15	..
17. For all Glacier excursions in the Chain of Mont Blanc above the limit of vegetation, per day	8	..

Tarif des Mulets.

The 'Tarif des Guides' is applicable to Mules in the case of all ordinary excursions, with the exception of the following ones.

	Frs.	Cts.
1. To the **Montanvert**, descending to the Valley and remounting to the **Chapeau**, or *vice-versâ*	9	..
2. Excursion to the **Jardin**, the Mule remaining all day at the **Montanvert**	9	..
3. If it stops for the night at the **Montanvert**	12	..
4. Excursion to the **Buet**, in one day, the Mule stopping at **la Pierre à Bérard**	10	..
5. The same excursion, if two days are occupied	12	..
6. On the ascent of **Mont Blanc**, if the Mule stops at the **Châlet de la Para**	6	..
7. On the same, if it goes to the **Pierre Pointue**	8	..
8. To the **Pierre Pointue**, the Mule awaiting the return of excursionists who go to the **Grands Mulets**	10	..
9. To the **Brévent**, the Mule descending to the Valley, and remounting to **Planpraz**, or *vice-versâ*	12	..
10. The same, with the addition of the **Flégère**	14	..

The Courmayeur 'Tarif des Courses.'[1]

	Guide. Francs.	Porter. Francs.
The **Ascent of Mont Blanc** *viâ* the **Col du Géant**, descending to **Chamonix**	Must be the subject of special arrangement.	
The same, *viâ* the **Col de la Brenva**, descending to **Chamonix**	do.	do.
The **Ascent of Mont Blanc**, *viâ* the **Glacier de Miage**, the **Dôme du Goûter** and the **Bosses du Dromadaire**, descending to **Chamonix**	100	60
Ascent of **Mont Maudit**	70	40
do. of the **Grandes Jorasses**, in two days	70	40
do. of the **Petites Jorasses**	40	25
do. of the **Aiguille de Rochefort**	50	30
do. of the **Aiguille de Leschaux**	50	30
do. of the **Aiguille de l'Eboulement**	50	30
do. of the **Aiguille de Talèfre**	50	30
do. of the **Aiguille de Triolet**	40	25
do. of **Mont Dolent**	20	12
do. of **Mont Gruetta**	70	50
do. of the **Aiguille du Géant**	20	15
do. of the **Aiguilles Marbrées**	70	40
do. of the **Aig. du Midi**, descending to **Chamonix**	40	20
do. of the **Tour Ronde**	70	50
do. of the **Aiguille Noire de Peuteret**	Must be the subject of special arrangement.	
do. of the **Aiguille Blanche de Peuteret**	35	20
do. of the **Aiguille Grise**	35	25
do. of **Mont du Brouillard**	40	25
do. of the **Tête Carrée**	70	40
do. of the **Aiguille de Bionnassay**, *viâ* the **Glacier de Miage**	80	45
The same, descending to **Chamonix**	50	30
Ascent of the **Aiguille de Trélatête**	40	25
do. of the **Aiguille du Glacier**	25	18
do. of **Mont Tondu**	6	6
do. of **Mont Saxe**	6	6
do. of **Mont Chétif**	8	6
do. of the **Crammont**	20	15
do. of **Mont Favre**		

[1] Enquiry should be made in all cases whether the *Tarif* price includes the return to Courmayeur of Guides and Porters.

	Guide. Francs.	Porter. Francs.
By the **Col du Géant** to **Chamonix**, in one day	40	25
The same, in two days	50	30
By the **Col de Miage** to **Chamonix**	50	30
do. **Col de la Brenva** to **Chamonix**	80	50
do. **Col de la Tour Ronde** to **Chamonix**	50	30
do. **Col de l'Aiguille du Midi** do.	50	30
do. **Col des Jorasses** do.	60	40
do. **Col des Hirondelles** do.	50	30
do. **Col de Pierre Joseph** do.	50	30
do. **Col de Talèfre** do.	50	30
do. **Col de Triolet** do.	45	30
do. **Col de Trélatête** to **Contamines**	50	30
do. **Col du Mont Tondu** do.	25	18
do. **Col de la Seigne** to **Motets**	12	12
do. **Col de la Seigne, Chapieux,** and **Col du Bonhomme** to **Chamonix**, in three days[1]	30	30
do. **Col de la Seigne** to **Contamines**, in one day[1]	16	16
do. do. do. in two days[1]	20	20
do. **Col Ferret** to **Orsières**	16	16
do. **Col du Petit Ferret** to **Orsières**	16	16
To the **Col Ferret**, returning to **Courmayeur**, one day	8	8
do. **Col de la Seigne** do. do.	8	8
do. **Lac de Combal** do. do.	6	6
do. **Cantine de la Visaille**, returning to **Courmayeur**	5	5
do. **Pavillon Mont Fréty**, returning to **Courmayeur**	6	6
do. **Cabane on the Col du Géant**, returning to **Courmayeur**, in one day	15	10
The same, in two days	20	15
To the **Cabane des Grandes Jorasses**, returning to **Courmayeur**, in one day	15	10
The same, in two days	20	15
To the **Cabane de Triolet**, returning to **Courmayeur**, in one day	15	10
The same, in two days	20	15
To the **Cabane du Dôme**, returning to **Courmayeur**, in one day	20	15
The same, in two days	25	20

[1] The *Tarif* is the same either *viâ* Chapieux or *viâ* the Col des Fours.

Mountains and Heights in and around the Range of Mont Blanc.

Name.	Height in Mètres.	Height in Feet.	Position of Summit.
Aiguillette, l' . .	2317	7602	On the range of the Brévent; W. of Chamonix.
Aiguillette, l' . .	2156	7074	N. by W. of the Village of le Tour.
Argentière, Aiguille d'	3901	12,799	Between the Glacs. d'Argentière and de Saleinoz; E.N.E. of Chamonix.
Arpette, Clochers d' .	2822	9259	N. side of Vallée d'Arpette; W. of Lac de Champex.
Béranger, Aiguille de .	3431	11,257	Head of Glacier de la Frasse. On Mieulet's map it is called la Bérangère.
Bérard, Aiguille de .	2612	8570	Between Mont Buet and the Aiguilles Rouges.
Bionnassay, Aiguille de	4061	13,324	Head of the two Glaciers de Miage; nearly due W. of the summit of Mont Blanc.
Blaitière, Aiguille de .	3533	11,591	E.S.E. of Chamonix; nearly due S. of the Montanvert.
Blanc, Mont . . .	4810	15,781	The observations made in 1844 by MM. Martins and Bravais to determine the height of Mont Blanc were calculated by M. Deleros, and the result (4810 mètres) was published in the *Annuaire Météorologique de la France*, 1851, vol. iii, p. 215. The same observations were also calculated by Prof. E. Plantamour, Director of the Observatory at Geneva, with a slightly different result (4811·7 mètres). See the *Tables Meteorological and Physical*, published by the Smithsonian Institution, Washington. M. Martins states in his book *Spitzberg au Sahara*, Paris, 1866, that the *mean* of the trigonometrical measures of Mont Blanc taken *down to his time* was 4809·6 mètres.
	4810	15,781	This is the elevation assigned to Mont Blanc upon Sheet xxii of the Carte Dufour, published in 1861.

Name.	Height in Mètres.	Height in Feet.	Position of Summit.
Blanc, Mont . . .	4810	15,781	The same elevation is assigned to Mont Blanc upon the map by Capt. Mieulet, published at Paris in 1865.
	4810	15,781	The same elevation is adopted on the Official Map of France, scale $\frac{1}{80000}$, revised in 1888.
	4811	15,785	Mons. X. Imfeld, upon the plan of the summit of Mont Blanc executed by him in 1891 for Mons. G. Eiffel, gives 4811 mètres as the elevation.
	4807	15,771	Upon Sheet 27 of the Carta d'Italia, scale $\frac{1}{800000}$, corrected to 1894, the height assigned to Mont Blanc is 4807 mètres.
Bochard, Aiguille à .	2672	8767	N.E. of the Montanvert.
Brévent, le . . .	2525	8284	W.N.W. of Chamonix; between the Valley of Chamonix, and the Valley of the Dioza.
Brouillard, Mont du .	...	...	This name is applied by Capt. Mieulet to the *ridge* on the W. of the Glacier du Brouillard (Val Véni).
Buet, Mont . . .	3109	10,200	N. by W. of Chamonix; N.W. by W. of the Village of Argentière. Commonly called *the* Buet.
Catogne . . .	2600	8530	N. by W. of Lac de Champex (Champey).
Capucin, le (Mont Maudit)	3831	12,568	E. by N. of Mont Maudit; near the head of the Glacier du Géant.
Capucin, le (Pic du Tacul)	3043	9984	E. of Pic du Tacul.
Chardonnet, Aiguille du	3823	12,543	E. of Lognan; N.W. $\frac{1}{2}$ W. of the Aiguille d'Argentière.
Charmoz, Aiguilles des	3442	11,293	E.S.E. of Chamonix; S. of the Montanvert.
Châtelet, Aiguille du .	2324	7625	Between the Glaciers du Fresnay & du Brouillard; N. of the lower end of the Italian Glacier de Miage.
Châtelet, le . . .	2542	8340	S. side of the Combe d'Orny; W.S.W. of Lac de Champex.
Chetif, Mont . .	2343	7687	W.N.W. of Courmayeur; S. side of Val Véni.
Côte, Montagne de la .	2588?	8491?	The buttress or ridge dividing the Glacier des Bossons from the Glacier de Taconnaz. On the Official Map of France, scale $\frac{1}{80000}$, the top of this ridge has been christened Mont Corbeau!

Name.	Height in Mètres.	Height in Feet.	Position of Summit.
Courmayeur, Mont Blanc de	4776	15,604	S.S.E. of the summit of Mont Blanc; at the head of the Glaciers du Brouillard and du Fresnay. The height 4776 mètres is after Capt. Mieulet. On the Carta d'Italia, scale $\frac{1}{50000}$, the height is said to be 4709 mètres (15,450 feet), and this is probably nearer the truth.
Courtes, les	3855	12,648	Part of the ridge between the Glaciers d'Argentière and de Talèfre; S. of the Aiguille du Chardonnet.
Crammont, Tête de	2737	8980	Due S. of the Col du Géant; W. of Pré St. Didier. Commonly called *the* Crammont.
Dames Anglaises, les	3604	11,824	Between the Aig. de Peuteret and the Aig. Blanche de Peuteret. Pinnacles on the ridge between the Glaciers de la Brenva and du Fresnay.
Darreï, le	3537	11,605	E. of Glacier d'Argentière; S. side of Glacier de Saleinoz.
Darrey, le	3881?	12,733?	On the ridge between the Glacier d'Argentière and the Glaciers of Saleinoz and Laneuvaz; between the Aig. d'Argentière and le Tour Noir.
Dolent, Mont	3830	12,566	At the junction of the ridges separating the Glaciers du Mont Dolent, d'Argentière, and de Laneuvaz.
Droites, les	4030	13,222	Northern side of the Glacier de Talèfre; E. ½ S. of the Aiguille Verte.
Dru, Aiguille du	3815	12,516	Eastern side of the Mer de Glace; E. of the Montanvert.
Eboulement, Aiguille de l'	3608	11,838	Between the Glaciers de Leschaux and de Triolet; S. of Aiguille de Talèfre.
Ecandies, Pointe des	2886	9469	At the head of the Vallée d'Arpette; eastern side of Glac. du Trient.
Enclave, Tête d'	2901	9518	N.E. of Col des Fours; N.W. by W. of les Motets.
Evêque, Aiguille de l'	3260	10,696	Northern side of the Italian Val Ferret; E.S.E. of the Grandes Jorasses.
Faus, Montagne des	3146	10,322	The buttress or ridge on the W. of the Glacier de Taconnaz; S. of the Village of les Bossons.

Name.	Height in Mètres.	Height in Feet.	Position of Summit.
Fer, Montagne de	1692	5551	The name given to the Southern end of the range of the Brévent; overlooking Servoz.
Flambeaux, les	3566?	11,700?	W. of Col du Géant; head of Glacier de Toule.
Floria, Aiguille de la	2958?	9705?	N. of Chamonix; Northern end of the range of the Brévent.
Fourche, Grande	3617	11,867	Head of the Glaciers du Tour, de Saleinoz, and du Trient; E.N.E. of Aiguille du Chardonnet.
Fours, Pointe des	2719	8921	S. of Col des Fours.
Freuge, Mont	2114	6936	In the Val Montjoie; S.W. by S. of Contamines.
Géant, Aiguille du	4010	13,156	N.E. of Col du Géant; N. by W. of Courmayeur.
Glacier, Aiguille du	3834	12,579	N. of Col de la Seigne; head of Glacier d'Estelette. Sometimes called Aiguille des Glaciers.
Goûter, Aiguille du	3845	12,615	S.W. of the Grands Mulets; N.W. of summit of Mont Blanc.
Goûter, Dôme du	4331	14,210	S. of Village of les Bossons; N.W. of summit of Mont Blanc.
Grapillon	...	...	This name is applied by Capt. Mieulet to a peak on the ridge dividing the Italian Glacier du Mont Dolent (Pré du Bar) from the Swiss Glacier du Mont Dolent; and it is given on the Carta d'Italia to the Mont Dolent. I have not heard it used on the spot.
Grépon, Aiguille de	...	...	S. of the Montanvert.
Gruetta, Mont	3685	12,090	S. side of Glacier de Triolet; N.W. of châlets of Gruetta.
Joli, Mont	2527	8291	Western side of Val Montjoie; W. of Village of Contamines.
Jorasses, Grandes	4206	13,800	Head of Glacier de Leschaux; S.E. by S. of the Montanvert.
Jorasses, Petites	3682	12,080	N.E. of Grandes Jorasses; S.E. of Montanvert.
Jours, Montagne des	2929	9610	A buttress of the Aiguille du Goûter, descending towards the Village of les Houches.
Jovet, Mont	2472	8110	S. of Village of Contamines; E.N.E. of Châlet à la Balme.
Leschaux, Aiguille de	3780	12,402	Between the Glaciers de Leschaux and de Triolet.
Luis, Grande	...	...	Between the Aiguille d'Argentière and le Darreï.

Name.	Height in Mètres.	Height in Feet.	Position of Summit.
Mallet, Mont	3988	13,084	Head of the Glacier du Mont Mallet, and of the Glacier des Périades.
Marbrées, Aiguilles	3514	11,529	N.E. of Col du Géant.
Maudit, Mont	4471	14,669	Head of the Glacier de la Brenva; N. by E. of the summit of Mont Blanc.
Miage, Dôme de	3688	12,100	Head of Glacier de Trélatête; N.W. of Aiguille de Trélatête.
Midi, Aiguille du	3843	12,608	S.S.E. of Chamonix; on the Eastern side of the Glacier des Bossons.
Moine, Aiguille du	3418	11,214	E. side of the Mer de Glace; W. of the Jardin.
Mulets, Grands	3050	10,007	S. by W. of Chamonix; between the Glaciers des Bossons and de Taconnaz. This height appears to be that of the Cabane, not of the top of the rocks.
Noire, Aiguille la	3427	11,244	Eastern side of Glacier du Géant; N. by E. of Col du Géant.
Orny, Pointe d'	3278	10,755	Head of Glacier d'Orny; S.W. by W. of Lac de Champex.
Peuteret, Aiguille Blanche de	4108	13,478	S.E. of the summit of Mont Blanc; between the Glaciers de la Brenva and du Fresnay.
Peuteret, Aiguille de	3777	12,392	S.E. of the Aiguille Blanche de Peuteret; between the Glaciers de la Brenva and du Fresnay. On the Carta d'Italia Péteret is used, and this was the spelling commonly employed until the publication of Capt. Mieulet's map.
Pissoir, le	3349	10,988	W. side of Glacier du Trient; N. of the Aiguille du Tour.
Plan, Aiguille du	3673	12,051	S.E. of Chamonix; S. by W. of the Montanvert.
Planereuse, Pointe de	3156	10,355	Southern side of Glacier de Saleinoz.
Plines, Pointe de	3065	10,056	Northern side of Glacier de Saleinoz.
Portalet	3350	10,991	Southern side of Glacier d'Orny; S.W. of Lac de Champex.
Pourrie, Aiguille	2599	8527	N. by W. of Chamonix; on the range of the Brévent.
Prarion	1969	6460	About midway between the Villages of St. Gervais and les Houches.
Rochefort, Aiguille de	4003	13,133	At the head of the Glacier de Rochefort; nearly due N. of Courmayeur.

Name.	Height in Mètres.	Height in Feet.	Position of Summit.
Ronde, la Tour	3775	12,385	Head of Glacier du Géant; N.W. of Courmayeur.
Ronde, Pointe	2655	8711	S.E. of Col de la Forclaz.
Rouges, Aiguilles	2966	9731	N. of Chamonix; W. of Village of Argentière.
Rouge, Mont	3257	10,686	Between the Italian Glacier du Mont Dolent (Pré du Bar) and the Glacier de Triolet.
Rouge, Mont	2942	9652	S.S.E. of Aiguille de Peuteret (Péteret).
Rousselette, Mont	2391	7845	Western side of Val Montjoie; S.W. by S. of the Village of Contamines. Sometimes called Aiguille de Roselette.
Sarsadorège, Aiguille de	2831	9288	S.E. of the Aiguille de Trélatête; a buttress of that mountain.
Saussure, Aiguille de	3845	12,615	S.E. of the Grands Mulets; on the Eastern side of the upper Glacier des Bossons.
Saxe, Mont	2358	7736	S. side of the Italian Val Ferret; N.N.E. of Courmayeur.
Scie, Aiguille de la	3694	12,120	Head of Glacier de l'Allée Blanche; about midway between the Aig. de Trélatête and Aig. du Glacier.
Seigne, Montagne de la	3137	10,392	S. side of the Col de la Seigne; between the Val du Glacier and the Allée Blanche.
Suc, Mont	2608	8557	W. of the Lac de Combal. A buttress of the Aiguille de Trélatête.
Tacul, Mont Blanc du	4249	13,941	N.E. by N. of Mont Maudit; S. of the Aig. du Midi.
Tacul, Pic du	3438	11,280	Between the Glaciers du Géant and de Leschaux; S. of the Aiguille du Moine.
Talèfre, Aiguille de	3745	12,287	Head of the Glaciers de Triolet and de Talèfre.
Tête Carrée	3770	12,369	At the head of the Glacier de Trélatête; between the Aiguille de Trélatête and the Col de Miage.
Tête Noire	1768	5801	N.E. by E. of the Village of St. Gervais; between St. Gervais and Servoz.
Tour des Courtes	3692	12,113	Part of the ridge between the Glaciers d'Argentière and de Talèfre; W. of Mont Dolent.
Tondu, Mont	3196	10,486	N.W. of les Motets; S.S.E. of Village of Contamines.

Name.	Height in Mètres.	Height in Feet.	Position of Summit.
Tour, Aiguille du .	3531	11,585	Between the Glaciers du Tour and du Trient ; S.E. of the Col de Balme.
Tour Noir, le . .	3843	12,608	Head of the Glacier de Laneuvaz ; S.E. of the Aiguille d'Argentière.
Trélaporte, Aiguille de	2550	8366	W. of le Couvercle ; S.S.E. of the Montanvert.
Trélatête, Aiguille de .	3932	12,900	At the head of the Glaciers de Trélatête and de l'Allée Blanche ; W. side of the Italian Glacier de Miage. The Aig. de Trélatête is sometimes called le Petit Mont Blanc.
	3904	12,809	
	3896	12,782	
Tricot, Mont . .	2328	7638	Between the French Glacier de Miage, and the Glacier de Bionnassay.
Triolet, Aiguille de .	3879	12,727	At the head of the Glaciers de Triolet and d'Argentière ; W.S.W. of Mont Dolent.
Trux, Mont . . .	2062	6765	E. by N. of the Village of Contamines.
Verte, Aiguille . .	4127	13,540	Between the Glaciers de Talèfre and d'Argentière ; E. of the Montanvert.
Vierge, la . . .	3222	10,571	Head of the Glacier du Géant ; N.N.W. of the Col du Géant.
Vorassay, Mont . .	2295	7530	E.S.E. of the Village of Bionnay.

Passes in and around the Range of MONT BLANC.

Name of Pass.	Height in Mètres.	Height in Feet.	Position of Summit.
Allée Blanche, Col de l'	*c* 3520	*c* 11,549	Between the Aigs. de Trélatête and the Aig. de la Scie. This is a variation on the Col de Trélatête.
Argentière, Col d' .	3520	11,549	Between le Tour Noir and Mont Dolent.
Arpette, Col d' . .	3040	9974	E. of the Pointe d'Orny ; between the Combe d'Orny and the Vallée d'Arpette.
Arpette, Fenêtre d' .	2683	8803	N. of Pointe des Ecandies ; between the Vallée d'Arpette and the Trient Glacier.
Balme, Col de . .	2202	7225	Between the Villages of le Tour and Trient.
Béranger, Col de . .	?	?	Between the Dôme de Miage and the Aig. de Béranger.
Blanc, Col du Mont .	4810	15,781	Over the top of Mont Blanc.
Bonhomme, Col du .	2483	8146	S.W. of the Pointe des Fours.
Brenva, Col de la . .	4301 ?	14,111 ?	Between the summit of Mont Blanc and Mont Maudit.
Brévent, Col du . .	2461	8074	N. of the Brévent.
Breya, Col de la . .	2479	8133	Between the Vallée d'Arpette and the Combe d'Orny.
Chardonnet, Col du .	3346	10,978	Between the Aig. du Chardonnet and the Aig. d'Argentière.
Dolent, Col . . .	3543	11,624	Between the Aig. de Triolet and Mont Dolent.
Dôme, Col du . .	4331	14,210	Over the top of the Dôme du Goûter.
Ecandies, Col des .	2743	9000	Between the Pointe d'Orny and the Pointe des Ecandies ; between Champey and the Trient Glacier.
Enclave, Col d' . .	2686	8812	Between the Tête d'Enclave and Mont Tondu.
Ferret, Col de . .	2536	8320	Between the Swiss and Italian Valleys of Ferret.
Ferret, Petit . .	2492	8176	Between the Swiss and Italian Valleys of Ferret. This pass is called le Chantonet on the Siegfried Map.
Flambeaux, Col des .	?	?	Between the two Flambeaux which are nearest to the Col du Géant.
Forclaz, Col de la (Swiss)	1523	4997	N.W. of the Pointe Ronde ; between Trient and Martigny.
Forclaz, Col de la (French)	1556	5105	Between the Valley of the Arve and St. Gervais ; S. by W. of Servoz.
Fourche, Col de la .	?	?	N. of the Grande Fourche.
Fours, Col des . .	2710	8891	N. of the Pointe des Fours.
Géant, Col du . .	3362	11,030	Between les Flambeaux and les Aigs. Marbrées. On the Italian Map the height 3347 mètres is assigned to this Pass.

Name of Pass.	Height in Mètres.	Height in Feet.	Position of Summit.
Glacier, Col du	?	?	S.W. of the Aig. du Glacier (Aig. des Glaciers).
Grands, Col des	?	?	Head of the Glacier des Grands.
Hirondelles, Col des	3478	11,411	Between the Grandes Jorasses and the Petites Jorasses.
Infranchissable, Col dit	3377	11,080	N. of the Tête Carrée; at the head of Glac. de Trélatête.
Jorasses, Col des Grandes	?	?	W.S.W. of the Grandes Jorasses.
Leschaux, Col de	3438	11,280	Between the Aigs. de l'Eboulement and Leschaux, at the foot of the latter.
Luis, Col de la Grande	3440	11,286	Between le Darrei and the Grande Luis.
Miage, Col de	3376	11,076	S.S.W. of the Aig. de Bionnassay.
Montets, Col des	1445	4741	N. of the Village of Argentière.
Montets, Col des Grands	?	?	E. of Aig. du Bochard (Aig. à Bochard).
Neuva, Col de la	3420	11,221	Between the Tour Noir and the Grande Luis.
Orny, Col d'	3098	10,164	S. of Pointe d'Orny; between Combe d'Orny and Glac. du Trient.
Pierre Joseph, Col de	3608	11,836	Over the top of the Aig. de l'Eboulement.
Planereuse, Col de	3063	10,049	S.W. of Pointe de Planereuse.
Rochefort, Col de	?	?	Between the Aigs. Marbrées, and the Aig. du Géant, nearer the latter.
Saleinoz, Fenêtre de	3309	10,856	N.E. of the Grande Fourche; head of Glac. du Trient.
Seigne, Col de la	2512	8242	Head of Val de l'Allée Blanche.
Talèfre, Col de	?	?	Head of the Glaciers de Talèfre and de Triolet.
Tête Noire	1194	3918	S. of Finhaut.
Tondu, Col du Mont	?	?	N.E. of Mont Tondu.
Toule, Col de	?	?	Between les Flambeaux and la Tour Ronde.
Tour, Col du	3350	10,991	Between the Aig. du Tour and the Grande Fourche.
Tour Noire, Col de la	?	?	Between le Tour Noir and the Aig. d'Argentière.
Tour, Fenêtre du	3476	11,404	Between Aig. du Chardonnet and the Grande Fourche.
Tour Ronde, Col de la	3790	12,435	Over the top of la Tour Ronde.
Trélatête, Col de	3498 ?	11,477 ?	Head of Glac. de l'Allée Blanche, close to Aig. de Trélatête.
Tricot, Col de	2133	6998	Between Mont Vorassay and Mont Tricot.
Triolet, Col de	?	?	Head of Glac. de Triolet; W.S.W. of Aig. de Triolet.
Voza, Col de	1675	5496	Between the Villages of les Houches and Bionnassay.

List of Guides of CHAMONIX.

(Corrected to May 4, 1896.)

Name.	Son of	Born.	Became Guide.
Tairraz Zacharie	...	Feb. 10, 1838	1862
Simond Benoît (*Mont-Roch*)	...	Jan. 26, 1837	1863
Folliguet Michel (*la Frasse*)	...	Jan. 9, 1840	do.
Payot Michel (*les Pècles*)	Jean	Jan. 17, 1840	do.
Cachat Fr.-Xavier (*Côte du Mont*)	...	Aug. 28, 1838	do.
Cachat Edouard (*Praz*)	J.-Mich.	Jan. 17, 1841	1864
Paccard Auguste	...	July 5, 1840	do.
Devouassoux Auguste (*Songenaz*)	...	Jan. 9, 1836	do.
Cupelin Edouard (*les Pèlerins*)	...	Sept. 21, 1840	1865
Devouassoux Alfred (*le Mollard*)	...	Nov. 3, 1840	do.
Tournier Jean (*les Bois*)	...	June 24, 1842	do.
Balmat Adolphe (*Granges*)	...	May 5, 1842	do.
Tairraz Alexandre (*les Bois*)	...	Sept. 26, 1838	do.
Mugnier Pierre-Clément (*le Tour*)	...	Jan. 31, 1842	do.
Ducroz Michel-Ambroise (*Praz*)	...	Nov. 4, 1840	do.
Charlet Jean-Estéril (*les Frasserand*)	...	Feb. 18, 1840	do.
Charlet Benoni (*Argentière*)	.	Feb. 12, 1838	do.
Bellin Julien (*Grassonnets*)	...	Feb. 27, 1840	do.
Payot Frédéric (*les Mossons*)	...	Jan. 8, 1838	do.
Devouassoux Pierre-Jos. (*Argentière*)	...	Feb. 14, 1842	1866
Tissay Pierre-Adolphe	...	Feb. 6, 1843	do.
Simond Pierre-Sidoine	...	July 13, 1841	do.
Tissay Jean-Pierre	...	Aug. 9, 1842	do.
Desailloud Joseph	...	Mar. 20, 1843	do.
Burnet Joseph	...	Aug. 10, 1841	do.
Fontaine Alexandre	...	June 1, 1841	do.
Frasserand Joseph	...	Mar. 7, 1843	do.
Devouassoux Henri	...	Ap. 12, 1844	1867
Devouassoux Ambroise	...	May 12, 1840	do.
Ravanel Ambroise	...	Aug. 21, 1844	1868
Tissay Joseph (*le Tour*)	...	Nov. 21, 1844	do.
Desailloud Edouard	...	June 29, 1844	do.
Charlet Joseph	Michel	Sept. 30, 1843	do.
Simond Joseph	Méril	Dec. 1, 1841	do.
Simond Ambroise (*Lacancher*)	Méril	Aug. 19, 1843	do.

Name.	Son of	Born.	Became Guide.
CACHAT Joseph (*Plan*)	Pierre	Mar. 23, 1846	1868
SIMOND Jean (*les Tines*)	Mathieu	Nov. 8, 1844	do.
FOLLIGUET Florentin	...	Feb. 14, 1842	do.
PACCARD Alexandre	...	Nov. 15, 1842	do.
COUTTET Michel-Antoine	...	Aug. 12, 1844	do.
COUTTET Joseph (*Songenaz*)	Julien	Mar. 31, 1846	do.
BALMAT Joseph-Marie (*les Pélerins*)	...	June 28, 1844	do.
COUTTET Joseph (*Glière*)	Ambroise	Dec. 26, 1846	1870
BOSSONNEY Henri	...	Dec. 2, 1843	do.
CUPELIN Auguste	...	July 25, 1842	do.
SEMBLANET François	...	May 27, 1846	do.
DEVOUASSOUX Denis	...	Dec. 17, 1845	do.
POZETTO Charles	...	Mar. 25, 1837	do.
SIMOND Auguste, dit Pernod (*Bioley*)	...	Jan. 21, 1843	do.
GARNY François-Napoléon	...	Aug. 3, 1844	do.
RAVANEL Joseph-Elie	...	Feb. 24, 1845	do.
RAVANEL Edouard	...	Sept. 29, 1846	do.
SIMOND Michel (*Argentière*)	...	Feb. 18, 1844	do.
DEVOUASSOUX François-Joseph	...	May 14, 1843	do.
BELLIN Marc	...	Sept. 2, 1845	1871
SIMOND François (*Lavancher*)	...	Oct. 26, 1847	do.
FOLLIGUET Frédéric	Victor	June 16, 1847	do.
CACHAT François (*Vers le Nant*)	...	Feb. 12, 1848	do.
BALMAT Ambroise (*les Pélerins*)	...	Nov. 23, 1841	do.
FOLLIGUET Adolphe	...	Dec. 28, 1843	do.
BELLIN Alexandre (*les Mossons*)	...	Oct. 26, 1843	do.
PAYOT Alphonse (*les Mossons*)	Ambroise	Jan. 21, 1847	do.
COUTTET J.-Pierre (*les Pècles*)	...	Oct. 28, 1845	do.
SIMOND Gaspard	...	May 19, 1847	do.
BELLIN Henri	...	Aug. 16, 1847	do.
SIMOND Joseph-Edouard (*Rives*)	...	Sept. 15, 1843	do.
RAVANEL Jean	Pierre	May 18, 1847	do.
DUCROZ Jean (*Chauzalet*)	...	Mar. 6, 1842	do.
LECHAT Marc	...	July 31, 1845	do.
DEVOUASSOUX Benoît	...	Feb. 21, 1849	1872
BALMAT François	Jean-Franç.	Feb. 28, 1847	do.
DEVOUASSOUX Albert	...	Aug. 23, 1844	do.
COMTE Alfred	...	Jan. 27, 1849	do.
CARRIER Jean-François	...	July 24, 1844	do.
CLARET-TOURNIER Alexandre	...	Jan. 14, 1841	do.
PAYOT Alfred	...	Ap. 28, 1844	do.
CACHAT Joseph (*Vers le Nant*)	...	Mar. 17, 1845	do.
COUTTET Delphin	...	Jan. 18, 1849	do.
TOURNIER Edouard (*les Mouilles*)	...	Dec. 13, 1843	do
COUTTET Joseph-Anatole	...	Dec. 13, 1847	do.

Name.	Son of	Born.	Became Guide.
RAVANEL François-Xavier	...	Feb. 23, 1845	1872
DEVOUASSOUX Benjamin	...	Jan. 15, 1843	do.
SIMOND Joseph (*les Mossons*)	...	July 7, 1849	do.
SIMOND Hubert	...	May 3, 1849	do.
PAYOT Jean-Pierre	J.-Marie	Sept. 26, 1847	do.
PAYOT Michel (*Granges*)	...	Oct. 22, 1837	do.
DUCROZ Joseph (*Chauzalet*)	...	Aug. 10, 1849	do.
LECHAT Joseph	...	July 31, 1845	do.
FOLLIGUET Camille	...	Sept. 20, 1845	1873
DEVOUASSOUX Joseph	...	May 20, 1846	1874
FAVRET Joseph	.	Mar. 5, 1844	do.
DUCROZ Emile	...	Jan. 12, 1847	do.
SIMOND Gustave	...	Jan. 11, 1851	do.
DUCROZ François-Anselme	...	Oct. 27, 1851	1875
CHARLET Albert (*Mont Roc*)	...	Sept. 7, 1850	do.
CACHAT Henri	...	June 8, 1850	do.
CACHAT Florentin	...	Dec. 7, 1850	do.
MESSAT Alexandre	...	...	...
PAYOT Alphonse	Jean	Nov. 28, 1852	1876
BALMAT Michel (*les Barats*)	...	Mar. 12, 1847	do.
PAYOT Prosper (*Mollaz*)	...	July 20, 1850	do.
MUGNIER François	Jean	Aug. 14, 1853	1877
BOSSONNEY Ambroise	Jean	Aug. 7, 1852	do.
SIMOND Michel-Alfred	Xavier	July 7, 1852	do.
COUTTET Joseph	...	Jan. 29, 1851	do.
COMTE Pierre-Charles	...	Ap. 28, 1853	do.
SIMOND Séraphin	...	Sept. 29, 1853	do.
COUTTET Jean-Edouard	Julien	Feb. 13, 1852	do.
COUTTET François-Chérubin	...	Sept. 27, 1852	do.
DUCREY Auguste (*les Mossons*)	...	June 27, 1854	1878
BOSSONNEY François	Joseph	Oct. 25, 1854	do.
FAVRET Alfred (*Granges*)	...	Feb. 7, 1846	do.
SIMOND Michel (*Rives*)	...	Sept. 6, 1846	do.
PAYOT Jean-Edouard (*les Bois*)	...	June 28, 1847	do.
SIMOND Emile (*Crey*)	...	Ap. 6, 1854	do.
RAVANEL Luc (*Grassonets*)	...	June 10, 1855	do.
DEVOUASSOUX Pierre-F. (*Argentière*)	...	Nov. 8, 1853	do.
MUGNIER Jean-Pierre (*le Tour*)	...	June 10, 1844	do.
MUGNIER Lubin (*le Tour*)	...	Sept. 26, 1852	do.
COUTTET Alfred (*les Pècles*)	...	July 21, 1855	do.
DUCROZ Gustave (*le Tour*)	...	Nov. 1, 1851	1879
COUTTET Gustave (*Lavancher*)	...	Jan. 28, 1856	do.
TOURNIER Joseph (*Frasse*)	..	Dec. 1, 1855	do.
PAYOT Joseph (*les Bossons*)	...	Nov. 2, 1853	do.
DESAILLOUD Benoît	...	Sept. 7, 1852	1880

Name.	Son of	Born.	Became Guide.
Balmat Jean-Pierre	...	Oct. 8, 1843	1880
Charlet Alphonse (*les Mouilles*)	...	Nov. 1, 1849	do.
Bossonney François (*Lieret*)	...	Jan. 3, 1857	do.
Charlet Joseph (*Praz-Conduit*)	Michel	Dec. 22, 1855	do.
Carrier Jean-Michel	...	May 31, 1845	do.
Cachat Edouard	...	July 8, 1854	1881
Charlet Henri	...	Nov. 28, 1856	do.
Couttet Eugène	...	July 17, 1858	do.
Ducroz Jean-Michel	..	July 19, 1856	do.
Couttet Ambroise (*les Pélerins*)	...	May 8, 1858	do.
Bossonney Constantin (*les Bois*)	...	Ap. 3, 1855	do.
Claret-Tournier Alphonse	Edouard	Ap. 25, 1859	1882
Devouassoux Jean-Félicien	...	Aug. 10, 1856	do.
Carrier Henri	Emile	Ap. 10, 1859	do.
Claret-Tournier Jean-Joseph	Jean-Marie	July 24, 1856	do.
Simond Tobie	Edouard	Jan. 31, 1857	do.
Couttet Joseph	Pierre	May 15, 1859	do.
Farini Joseph (*les Mouilles*)	...	Mar. 22, 1855	do.
Schuler Fritz	..	Sept. 18, 1856	do.
Garny Jean-Baptiste	...	Sept. 22, 1856	do.
Devouassoux François-Olivier	..	Feb. 25, 1860	1883
Payot Joseph-Henri	...	May 19, 1860	do.
Couttet Alphonse (*Montquart*)	Michel	Ap. 5, 1859	do.
Farini Aristide	...	Dec. 29, 1859	do.
Payot Joseph-Aristide	...	Mar. 28, 1852	do.
Couttet Joseph-Edouard	.	Dec. 12, 1859	do.
Savioz Michel-Eugène	..	Ap. 20, 1860	1884
Simond Julien-Philibert	...	Aug. 26, 1857	do.
Devouassoux Jean-Pierre	...	Aug. 22, 1855	do.
Couttet Aristide	..	Aug. 1, 1857	do.
Bellin James-Victor-Marie	..	Jan. 7, 1861	do.
Claret Victor-Edouard	...	Mar. 17, 1861	do.
Couttet Joseph	Victor	June 23, 1859	do.
Cachat Aristide	...	Mar. 2, 1855	do.
Cachat Armand	...	Nov. 25, 1860	1885
Claret-Tournier Jean	Ferdinand	May 30, 1859	do.
Sermet Alexandre	...	Jan. 22, 1860	do.
Tissay Clément	...	Feb. 9, 1855	do.
Couttet François-Hercule	...	Mar. 16, 1862	do.
Claret-Tournier Alfred	Joseph	Feb. 3, 1862	do.
Claret-Tournier Joseph	Edouard	Aug. 10, 1862	do.
Claret-Tournier Edouard	Ferdinand	Dec. 17, 1862	do.
Favret Ambroise	...	Aug. 25, 1858	do.
Desailloud Michel	...	Jan. 13, 1860	do.
Ravanel Nestor	...	Jan. 2, 1860	do.

Name.	Son of	Born.	Became Guide.
Burnet Jean-Joseph	...	Aug. 16, 1860	1885
Desailloud Auguste	...	Nov. 22, 1860	1886
Devouassoux Joseph-Albert	...	May 26, 1860	do.
Claret Jean-Joseph	Jacq.-Jos.	Jan. 30, 1860	do.
Devouassoux Jean-Michel	...	June 21, 1863	do.
Devouassoux Joseph	...	June 28, 1863	do.
Paccard Edouard	Joseph	Ap. 19, 1861	do.
Claret-Tournier Joseph-H.	Alexandre	Sept. 3, 1863	do.
Tissay Jean-Alphonse	...	June 18, 1863	do.
Ducroz François-Benjamin	...	Nov. 29, 1859	do.
Ducroz Pierre-Marie	...	Dec. 26, 1859	do.
Claret-Tournier Ambroise	Edouard	Sept. 23, 1862	do.
Desailloud Joseph	...	Mar. 17, 1863	do.
Bellin Octave	...	Oct. 23, 1862	do.
Frasserand François	...	Mar. 4, 1861	do.
Tairraz Clément	...	Ap. 9, 1861	do.
Schuler Henri	...	June 4, 1861	1887
Comte Alfred	...	Oct. 1, 1863	do.
Desailloud Jean	...	Dec. 23, 1859	do.
Couttet Armand	...	Sept. 12, 1863	do.
Balmat Jean	...	Aug. 24, 1863	do.
Balmat Auguste	Frédéric	Oct. 3, 1858	do.
Comte François	...	June 1, 1858	do.
Claret-Tournier Joseph	Joseph	May 7, 1864	do.
Bellin Alphonse	...	May 18, 1855	do.
Balmat Joseph	...	Feb. 3, 1862	do.
Mugnier Alphonse	...	Jan. 14, 1851	do.
Balmat Alexandre	...	Dec. 6, 1856	do.
Mugnier Michel	...	Feb. 5, 1863	do.
Simond Camille	...	Dec. 25, 1863	do.
Devouassoux Pierre	...	Mar. 27, 1864	do.
Claret-Tournier Charles	Edouard	Dec. 27, 1865	1888
Bossonney Alphonse	...	Dec. 14, 1861	do.
Claret Edouard	Jacq.-Ed.	May 25, 1865	do.
Comte Louis	...	Sept. 25, 1861	do.
Favret, Lambert	...	Mar. 7, 1864	do.
Couttet Jean-Marie	...	Feb. 6, 1865	do.
Carrier Edouard	...	Sept. 15, 1862	do.
Cachat Aristide	Jean	May 9, 1865	do.
Tronchet François	..	Mar. 18, 1863	do.
Tairraz Alfred	...	Sept. 15, 1860	do.
Charlet Jean	...	Feb. 14, 1864	do.
Simond Joseph-Adolphe	Alexandre	Jan. 24, 1863	1889
Bossonney Jules	...	Mar. 12, 1866	do.
Simond Jules	Léon	Aug. 1, 1863	do.

Name.	Son of	Born.	Became Guide.
COUTTET François-Henri	...	Mar. 8, 1864	1889
SIMOND Jules	Edouard	Oct. 28, 1865	do.
BRETON Emile	...	July 1, 1866	do.
COUTTET Julien (*Lavancher*)	Michel	June 21, 1863	do.
SIMOND Jules (*les Tines*)	Edouard	Mar. 10, 1865	do.
SIMOND Alexandre (*les Tines*)	Joseph	Nov. 23, 1866	1890
SIMOND Edouard (*les Bois*)	Alexandre	Aug. 7, 1867	do.
COUTTET François (*Lavancher*)	François	June 23, 1867	do.
DESAILLOUD Joseph (*les Favrants*)	J.-B.	Sept. 7, 1863	do.
COMTE Ambroise (*les Favrants*)	Mich.-Aug.	Nov. 7, 1866	do.
LECHAT Joseph-Marc (*les Pélerins*)	Auguste	Mar. 2, 1866	do.
LECHAT François (*les Pélerins*)	Auguste	Nov. 24, 1867	do.
DEVOUASSOUX Michel-A. (*la Joux*)	Mich.-Mér.	Feb. 24, 1862	do.
CHARLET Edouard-Luc (*la Joux*)	Auguste	Nov. 23, 1866	do.
DEVOUASSOUX Jul.-Mér. (*Argentière*)	Florentin	July 5, 1867	do.
DUCROZ Joseph-Alphonse (*le Tour*)	Joach.	Jan. 4, 1864	do.
TISSAY Jules-Albert (*le Tour*)	Gaspard	Jan. 4, 1867	do.
DUCROZ Ant.-Mod. (*le Tour*)	Zacharie	Feb. 5, 1865	do.
CARRIER Jean-Pierre (*Argentière*)	Ferdinand	Feb. 20, 1867	do.
TISSAY Michel-Louis	Jacques	June 21, 1866	1891
COUTTET Alfred (*les Mossons*)	Victor	June 2, 1866	do.
DUCROZ Henri	Jérémie	June 13, 1866	do.
PAYOT Jean-François (*Praz d'en bas*)	Jean-A.	Ap. 3, 1866	do.
COUTTET A. (*Songenaz*)	Julien	Mar. 8, 1866	do.
SIMOND Joseph-Aristide (*Tissours*)	Fr.-Joseph	Aug. 17, 1859	do.
FAVRET Michel-Alphonse (*les Rebats*)	Michel-Aug.	Mar. 8, 1867	do.
BALMAT Joseph-Alexandre (*les Bois*)	Michel-Amb.	Aug. 27, 1868	do.
SIMOND Joseph (*Lavancher*)	Mar.-Xav.	Aug. 21, 1865	do.
SIMOND M.-E. (*Mont Roch*)	Ben.	Oct. 2, 1865	do.
DEVOUASSOUX Jean-Albert (*Grassonets*)	Julien	Oct. 14, 1865	do.
DUCROZ Jean-Michel (*le Tour*)	Zacharie	Dec. 2, 1866	do.
SIMOND Joseph (*le Tour*)	Romain	Oct. 4, 1868	do.
MUGNIER Lubin-Eucharist (*le Tour*)	Julien	Jan. 6, 1862	1892
SIMOND Pierre-Edouard (*le Tour*)	Jean	Aug. 21, 1867	do.
SIMOND Jules-Adolphe (*le Tour*)	Jean	Oct. 12, 1869	do.
DEVOUASSOUX Joseph-Eloi (*Grassonets*)	Jean	Aug. 22, 1867	do.
RAVANEL Gilbert-Alphonse (*Mouroc*)	Ambroise	Dec. 31, 1869	do.
RAVANEL Jules (*Mouroc*)	Ambroise	June 13, 1867	do.
DEVOUASSOUX Jules-François (*Argentière*)	Jérémie	Mar. 30, 1865	do.
RAVANEL Joseph-Louis (*les Iles*)	Pierre	Feb. 9, 1869	do.
DUCROZ François (*la Joux*)	Benoni	July 13, 1869	do.
CACHAT Rosset-Joseph (*les Tines*)	Tanislas	Nov. 16, 1866	do.
BALMAT Pierre-François (*Sauberant*)	Jean	June 25, 1866	do.
COUTTET Auguste (*les Pècles*)	François	Jan. 9, 1869	do.
GÉRINE Jean	Auguste	Jan. 1, 1866	do.

Name.	Son of	Born.	Became Guide.
PAYOT Delphin-Antilde (*les Bossons*)	Michel	Aug. 28, 1867	1892
SIMOND Edouard (*Praz d'en bas*)	Michel	Dec. 26, 1867	do.
POT Jean (*le Mont*)	Simond	Dec. 16, 1867	do.
SIMOND Jean-Auguste (*Monquart*)	François	Feb. 21, 1869	do.
COUTTET Alfred (*Songenaz*)	Julien	Dec. 4, 1868	do.
DEVOUASSOUX Pierre-Elie (*Monquart*)	Julien	Feb. 20, 1854	1894
SIMOND Henri	Joseph	July 31, 1868	do.
BOSSONNEY Joseph (*les Pècles*)	Zacharie	Sept. 12, 1868	do.
DESAILLOUD Clément (*le Praz Conduit*)	Philippe	Sept. 27, 1868	do.
SIMOND Alphonse (*Lavancher*)	Tobie	Mar. 24, 1870	do.
DEVOUASSOUX Joseph-Maxime (*la Joux*)	Méril	Ap. 10, 1870	do.
DEVOUASSOUX Pierre-Gilbert (*Argentière*)	Florentin	Jan. 24, 1870	do.
DEVOUASSOUX Paul (*Grassonets*)	Julien	Mar. 22, 1869	do.
BALMAT Joseph (*le Mont*)	Adolphe	Sept. 18, 1868	do.
BALMAT Jean-Edouard (*le Mont*)	Adolphe	Sept. 23, 1870	do.
PAYOT Clément (*Granges*)	Michel	Sept. 29, 1869	do.
DUCROZ Edouard (*Vers le Nant*)	Jérémie	Aug. 6, 1870	do.
BALMAT Alexandre (*les Pècles*)	Henri	July 6, 1867	do.
RAVANEL Jean (*Praz*)	Pierre	Oct. 9, 1870	do.
TAIRRAZ Gustave (*Praz*)	Michel	Ap. 14, 1866	do.
TAIRRAZ Alexandre (*Praz*)	Tobie	Mar. 17, 1872	1895
CACHAT Joseph-François (*Nant*)	Jean	Feb. 2, 1867	do.
CHARLET Joseph (*le Mollard*)	Auguste	. . . 1867	do.
BRETON Jean-Adolphe (*les Mouilles*)	Joseph	Mar. 9, 1869	do.
DEVOUASSOUX Jean (*Tissours*)	...	Jan. 16, 1867	do.
CACHAT Paul (*Nant*)	Jean	Mar. 3, 1869	do.
CACHAT Clément (*Nant*)	Ferdinand	Mar. 13, 1870	do.
SIMOND Jules-François (*les Bois*)	Alexandre	Nov. 12, 1870	do.
BALMAT Alphonse (*Praz d'en bas*)	Venance	Feb. 7, 1869	do.
COUTTET François-Joseph (*les Pélerins*)	Sidoine	Sept. 6, 1870	do.
CLARET Aristide-Joseph (*Gaudenay*)	Joseph	Feb. 27, 1867	do.
SIMOND François (*Lavancher*)	Jean	Feb. 23, 1869	do.
BURNET Felix (*Lavancher*)	...	Ap. 1, 1865	do.
CHARLET Paul (*les Tines*)	Joseph	June 27, 1872	do.
DUCROZ Armand (*le Tour*)	Pierre	Jan. 28, 1870	do.
RAVANEL Pierre-Joseph (*les Iles*)	François	Feb. 16, 1870	do.
DEVOUASSOUX Joseph (*Argentière*)	Jérémie	Feb. 15, 1870	do.
RAVANEL Jean-Michel (*les Iles*)	Pierre	Feb. 6, 1871	do.
BELLIN Frédérie (*les Iles*)	Pierre	Dec. 18, 1871	do.
RAVANEL Erneste (*les Iles*)	François	Sept. 27, 1872	do.
DEVOUASSOUX Albert (*Argentière*)	Josué	Sept. 4, 1872	do.
CHARLET Hubert (*les Frasserand*)	Michel	Feb. 23, 1868	do.
DEVOUASSOUX Pierre-Arm. (*Argentière*)	Josué	Oct. 14, 1870	do.

List of Guides and Porters at COURMAYEUR.

(Corrected to May 4, 1896.)

Guides.

Berthod Alexis.	Proment Alexis.
Bertholier Laurent.	Proment David.
Croux Fabien.	Proment Julien.
Croux Joseph.	Proment Laurent (the elder).
Croux Laurent.	Proment Laurent (the younger)
Fenoillet Alexis.	Puchoz Alexis.
Gadin Joseph.	Revel Laurent.
Mussillond Louis.	Revel Pierre.
Ollier César.	Rey Joseph-Marie.
Petigax Joseph.	Truchet Laurent.

Porters.

Bertholier Julien.	Mochet Laurent (Damien).
Brocherel Alexis.	Mochet Laurent (Eleazard).
Brocherel Joseph.	Ollier Félix.
Brunet Maurice.	Ottoz Daniel.
Croux Ferdinand.	Ottoz Louis.
Fenoillet Daniel.	Ottoz Laurent.
Fleur Laurent.	Petigax Louis.
Frassy Julien.	Quaizier Simon.
Glarey Alexis.	Revel Jean.
Glarey Samuel.	Revel Napoléon.
Lanier Maurice.	Revel Pantaléon.
Melica Ferdinand.	Rey Cyprien.
Meyseiller Laurent.	Rey Emile.
Mochet Alexis.	

Brocherel Joseph-Raphaël,
guide-chef (la guida-capo).

Conversion of Mètres into English Feet.

Mètres.	Feet.	Mètres.	Feet.	Mètres.	Feet.
1 =	3·28	50 =	164·04	100 =	328·09
2	6·56	51	167·33	200	656·18
3	9·84	52	170·61	300	984·27
4	13·12	53	173·89	400	1312·36
5	16·40	54	177·17	500	1640·45
6	19·69	55	180·45	600	1968·54
7	22·97	56	183·73	700	2296·63
8	26·25	57	187·01	800	2624·72
9	29·53	58	190·29	900	2952·81
10	32·81	59	193·57	1000	3280·90
11	36·09	60	196·85	1100	3608·99
12	39·37	61	200·13	1200	3937·08
13	42·65	62	203·42	1300	4265·17
14	45·93	63	206·70	1400	4593·26
15	49·21	64	209·98	1500	4921·35
16	52·49	65	213·26	1600	5249·44
17	55·78	66	216·54	1700	5577·53
18	59·06	67	219·82	1800	5905·62
19	62·34	68	223·10	1900	6233·71
20	65·62	69	226·38	2000	6561·80
21	68·90	70	229·66	2100	6889·89
22	72·18	71	232·94	2200	7217·98
23	75·46	72	236·22	2300	7546·07
24	78·74	73	239·51	2400	7874·16
25	82·02	74	242·79	2500	8202·25
26	85·30	75	246·07	2600	8530·34
27	88·58	76	249·35	2700	8858·43
28	91·87	77	252·63	2800	9186·52
29	95·15	78	255·91	2900	9514·61
30	98·43	79	259·19	3000	9842·70
31	101·71	80	262·47	3100	10,170·79
32	104·99	81	265·75	3200	10,498·88
33	108·27	82	269·03	3300	10,826·97
34	111·55	83	272·31	3400	11,155·06
35	114·83	84	275·60	3500	11,483·15
36	118·11	85	278·88	3600	11,811·24
37	121·39	86	282·16	3700	12,139·33
38	124·67	87	285·44	3800	12,467·42
39	127·96	88	288·72	3900	12,795·51
40	131·24	89	292·00	4000	13,123·60
41	134·52	90	295·28	4100	13,451·69
42	137·80	91	298·56	4200	13,779·78
43	141·08	92	301·84	4300	14,107·87
44	144·36	93	305·12	4400	14,435·96
45	147·64	94	308·40	4500	14,764·05
46	150·92	95	311·69	4600	15,092·14
47	154·20	96	314·97	4700	15,420·23
48	157·48	97	318·25	4800	15,748·32
49	160·76	98	321·53	4900	16,076·41
		99	324·81		

One Mètre = 3·2808992 English Feet (*Annuaire des Longitudes*, Paris).

Conversion of English Feet into Mètres.

Feet.	Mètres.	Feet.	Mètres.	Feet.	Mètres.
1 =	0·30	3300 =	1005·82	8300 =	2529·79
2	0·61	3400	1036·30	8400	2560·27
3	0·91	3500	1066·78	8500	2590·75
4	1·22	3600	1097·26	8600	2621·23
5	1·52	3700	1127·74	8700	2651·71
6	1·82	3800	1158·22	8800	2682·19
7	2·13	3900	1188·70	8900	2712·67
8	2·43	4000	1219·18	9000	2743·15
9	2·74	4100	1249·66	9100	2773·63
10	3·04	4200	1280·14	9200	2804·11
20	6·09	4300	1310·62	9300	2834·59
30	9·14	4400	1341·10	9400	2865·07
40	12·19	4500	1371·58	9500	2895·55
50	15·24	4600	1402·05	9600	2926·03
60	18·29	4700	1432·53	9700	2956·51
70	21·34	4800	1463·01	9800	2986·99
80	24·38	4900	1493·49	9900	3017·47
90	27·43	5000	1523·97	10,000	3047·94
100	30·48	5100	1554·45	10,100	3078·42
200	60·96	5200	1584·93	10,200	3108·90
300	91·44	5300	1615·41	10,300	3139·38
400	121·91	5400	1645·89	10,400	3169·86
500	152·40	5500	1676·37	10,500	3200·34
600	182·88	5600	1706·85	10,600	3230·82
700	213·36	5700	1737·33	10,700	3261·30
800	243·84	5800	1767·81	10,800	3291·78
900	274·31	5900	1798·29	10,900	3322·26
1000	304·79	6000	1828·77	11,000	3352·74
1100	335·27	6100	1859·25	11,100	3383·22
1200	365·76	6200	1889·73	11,200	3413·70
1300	396·23	6300	1920·21	11,300	3444·18
1400	426·71	6400	1950·68	11,400	3474·66
1500	457·19	6500	1981·16	11,500	3505·14
1600	487·67	6600	2011·64	11,600	3535·62
1700	518·15	6700	2042·12	11,700	3566·10
1800	548·63	6800	2072·60	11,800	3596·57
1900	579·11	6900	2103·08	11,900	3627·05
2000	609·59	7000	2133·56	12,000	3657·53
2100	640·07	7100	2164·04	12,100	3688·01
2200	670·55	7200	2194·52	12,200	3718·49
2300	701·03	7300	2225·00	12,300	3748·97
2400	731·51	7400	2255·48	12,400	3779·45
2500	761·99	7500	2285·96	12,500	3809·93
2600	792·47	7600	2316·44	12,600	3840·41
2700	822·94	7700	2346·92	12,700	3870·89
2800	853·42	7800	2377·40	12,800	3901·37
2900	883·90	7900	2407·88	12,900	3931·85
3000	914·38	8000	2438·36	13,000	3962·33
3100	944·86	8100	2468·84	14,000	4267·12
3200	975·34	8200	2499·31	15,000	4571·92

One English Foot = 3·0479449 décimètres (*Annuaire des Longitudes*, Paris).

THE CHAIN OF MONT BLANC.

(after the Surveys of
Capts Mieulet, Genl Dufour & Mr A.A. Reilly)

ENGLISH MILES
0 1 2 3 4 5

FRENCH KILOMÈTRES
0 1 2 3 4 5 6 7 8

Tracks
Paths & Roads
Frontier
The Heights are in English Feet.

VAL MONT JOIE
VAL DU GLACIER
FRANCE
ITALIE
VALLÉE DE CHAMOUNIX
VALLÉE BLANCHE
VAL FERRET D'ITALIE

Bionnay (3192)
St Nicholas
Champel
la Villette
Col de Voza (7456)
Bonnassay
la Chapelle
Champelet
les Contamines (3839)
Mt VORASSAY
Mt TRUC
Mt PRÉGUE
Mt ROUSSELETTE (7845)
Notre Dame de la Gorge
Nant Bourrant (4780)
Chalet à la Balme
Mt JOVET
Col du Bonhomme
Col des Fours
PIC DES FOURS (8321)
TÊTE D'ENLAVES
Mt DONDU
les Motets (6227)
les Glaciers
les Chapieux (4931)
MONTE DE LA SEIGNE (10,392)
Lac de Combal (6365)
la Vesaille (5423)
MONT JOLY (8291)
Tour Bellevue (5945)
Tour Tré la Tête
GLAC. DE LA FRASSE
GLACIER DE TRÉ LA TÊTE
GLACIER DE MIAGE
GL. DE BIONNASSAY
AIG. DE BIONNASSAY
AIG. DE TRÉLATÉTE
TÊTE CARRÉE
DÔME DU GOUTER
ROSSES DU PROMATAIRE
MONT BLANC
GL. DU MONT BLANC
GL. DU DÔME
GL. DU GLACIER
AIG. DU GLACIER
GL. DE BROUILLARD
GL. DE FRESNAY
GL. DE TALÈFRE
GLAC. D'ALLÉE BLANCHE
GLAC. DE LA BRENVA
AIG. DE TALÈFRE
AIG. DU GOUTER
Tour Noire
Aiguille Verte
Aiguille du Dru
Aiguille du Midi
Aiguille du Plan
Aiguille de Blaitière
Aiguille du Fou
Aiguille du Peigne
Aiguille de Roberge
Aiguille du Tacul
Mont Maudit
Aiguille de Rochefort
Dôme de Rochefort
Aiguille de Talèfre
Aiguille de Leschaux
Aiguille du Moine
Aiguille du Bochard
Aiguille de Triolet
Aiguille de l'Eboulement
Aiguille de Charmoz
Aiguille de Grépon
Aiguille de Blaitière
Aiguille du Plan
Aiguille du Midi
Aiguille Noire de Peuterey
Aiguille Blanche de Peuterey
Aiguille de Peuterey
Aiguille de Triolet
Aiguille du Mont Dolent
Aiguille de Talèfre
Aiguille de Leschaux
Aiguille du Moine
Aiguille du Bochard

THE CHAIN OF MONT BLANC.

(after the Surveys of
Capts Mieulet, Gens Dufour & Mr A.A. Reilly)

ENGLISH MILES
FRENCH KILOMETRES

Tracks
Paths & Roads
Frontier
The Heights are in English Feet.

VAL MONTJOIE
VAL DU GLACIER
FRANCE
ITALIE
VALLÉE DE CHAMOUNIX
VAL FERRET D'ITALIE
VALLÉE BLANCHE
GLACIER DU GÉANT OU DU TACUL
GLACIER DE MIAGE
GLACIER DE LA BRENVA
GLACIER DE TRÉ LA TÊTE
GLACIER DE BOSSONS
GLACIER DES PÉRIADES
GLACIER DU MONT MALLET
GLACIER DE TALÈFRE
GLACIER DU MONT TOLENT
GLACIER DE LESCHAUX
GLACIER DE LOGNAN
GLACIER DU MONT BLANC
GLACIER DE TACONNAZ
GLACIER DES PÉLERINS
GLACIER DU BOCHARD
GLACIER DE TRIOLET
GLACIER DE LA FRASSE
GLACIER DE BIONNASSAY
GLACIER DE LA CHARPOUA
GLACIER DE TRÉLATÊTE
GLACIER DE L'ALLÉE BLANCHE
GLACIER DE L'ARGENTIÈRE
GLACIER DU MANTILLON
GLACIER DU TOUR
GLACIER DE LA GRIA
GLACIER DE LA TÊTE
GLACIER DU DOME
GLACIER DU GLACIER
GLACIER DE L'ARGENTIÈRE
GLACIER DU MONT DE LA SAXE
GLACIER DU MONT FRETY
GLACIER DU MONT DE LA SAXE
GLACIER DU MONT DE LA SAXE
GLACIER DU MONT DE LA SAXE

R

A N C

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D

Z

VALLÉE DE CHAMONIX

VAL FERRET (SUISSE)

VAL FERRET (D'ITALIE)

MONT BLANC

LA VALLÉE BLANCHE

GLACIER DU GÉANT OU DU TACUL

GLACIER DE L'ARGENTIÈRE

GLACIER DU TRIENT

L'AIGUILLETTE (7602)

BRÉVENT (8284)

Planpraz

BelAchat

les Houches

Taconnaz

les Bossons

les Praz

CHAMONIX les Praz (3445)

les Moulles

Planas

Cailet

les Tines

les Bois

les Chaules

Arve Rivière

Lavancher

Ouarmet

Argentière (3963)

Le Tour (4695)

Hotel de Buet

Le Nant (4180)

Hotel Col des Montets (4740)

Frassenaire

Tallerine

AIG. DE LA FLORIAZ

Chalet de Floriaz

la Flégère (5925)

L'AIGUILLETTE (7074)

Barberine (3779)

Hotel Bouane

Le Salvan

Trient R.

Hotel (3920)

Tête Noire (3598)

Col de la Forclaz (4797)

Col de Balme (7231)

CROIX DE FER (7478)

Trient

Gillon (4248)

Marigny

Prelaves

Petoudet

la Garde

Bonne

LES RONDE (8741)

LE CLOCHER (8170)

POINTE D'ORNY

AIG. DU TOUR

GL. DU TRIENT

GL. D'ORNY

GL. DES GRANDES

GL. DU TOUR

GL. DE LA CHARPOUA

AIG. VERTE

AIG. DU MOINE

LES DROITES

AIG. D'ARGENTIÈRE

GLAC. DE SALEINOZ

LE TOUR NOIR

GLAC. DE TALÈFRE

GLAC. DU MONT MALLET

MONT DOLENT

GLAC. DU MONT DOLENT

GL. DE TRIOLET

GL. DE LANEUVA

GL. DARREI

Col Ferret (8176)

la Lechere

le Clou

la Folly (5240)

Chalets de Ferret (5565)

Col Ferret (8320)

Prè le Bat (6759)

Gruetta (5784)

Prazec (5338)

La Vachey (5384)

Neyron (5299)

Dotre

Ville d'Issert

les Arlaches

Praz de Fort (3760)

Planereuse

Pallion

la Seilon (4921)

Tom de Proz (3607)

Chanrey (3607)

Tabane

Arpette

Champex

Lac de Champex

Issert R.

Dranse de Ferret

Dranse Bottes R.

la Saxe

MONT SAXE (7736)

COURMAYEUR (4045)

MONT CHETIF (7637)

Notre Dame de Guerison

Entrèves (4223)

la Visaille (5423)

VALVENI

MONT BLANC DU TACUL

LE ROGNON

PETIT ROGNON

LA TOUR RONDE

GLAC. DES PÉRIADES

LA TOUR NOIRE

AIG. NOIRE

AIG. DU GÉANT

AIG. MARBRÉES

GL. DE TOULE

GL. DU MONT FRETY

GL. DE BROUILLARD

GL. DE FRESNAY

GL. DU MONT BLANC

GLAC. DE LA BRENVA

GL. DES ROCHEFORTS

GL. DES JORASSES

GRANDES JORASSES

GL. DES PÉLERINS

GL. DES MANTILLONS

GL. DE TACONNAZ

GL. DE BOSSONS

GL. DE BIONNASSAY

GL. DE LA GRIA

AIG. DE BIONNASSAY

AIG. DU MIDI

AIG. DES CHARMOZ

AIG. DU BOCHARD

G. DE LOGNAN

GL. DU MANT BLANC

GL. DE LESCHAUX

AIG. DE L'ÉBOULEMENT

GL. DE TALÈFRE

GL. DE PIERRE JOSEPH

GL. DE LA CHARPOUA

GL. DE LESCHAUX

GLAC. DU MONT MALLET

GLAC. DU MONT DOLENT

Engraved by J. Addison Jun.

R

A N C

E

VALLÉE DE CHAMONIX

VAL FERRET SUISSE

VAL FERRET D'ITALIE

MONT BLANC

L'AIGUILLETTE (7602)

BRÉVENT (8284)

Planpraz

BelAchat

les Houches

Taconnaz

Bossons

les Chables

CHAMONIX (3445)

les Praz

Argentiere

les Mouilles

Planaz

Caillet

Montanvert (6303)

Pierre à l'Echelle (7910)

Aiguille Rouge (6723)

GRANDS MULETS (10.113)

GOUTER

AIG. DU MIDI

AIGUILLE DU PLAN

AIG. DES CHARMOZ

AIGUILLE DE BLAITIÈRE

AIGUILLE DE TRELATÊTE

AIGUILLE DE LA PORTE

LA VALLÉE BLANCHE

M. BLANC DU TACUL

PETIT ROGNON

LE ROGNON

GLACIER DU GÉANT OU DU TACUL

Lac de Tacul

LA TOUR RONDE

LA TÉRIGE

GLAC. DES PÉRIADES

AIG. NOIRE

PIC DU TACUL

AIGS MAIGRÉES

AIG. DU PLAN

GLAC. DU MONT MALLET

MONT MALLET

GRANDES JORASSES

MONT TRUIT

PRETY

Entrèves (4223)

MONT CHETIF (7687)

Dolent

Neyron (5299)

Praz Sec (5338)

La Vachey (5384)

La Saxe

MONT SAXE (7736)

COURMAYEUR (4045)

Doire

Petit Ballon R.

AIG. DE LA FLORIAZ

Chalet de Floriaz

la Flegere (5925)

Arve Riv.

Lavancher

les Tines

les Bois

Chavanet

Le Tour (4695)

Le Nant (4180)

Hotel de Buet

Fallorme

Hotel (4740)

Col des Montets

L'AIGUILLETTE (7074)

Frasserons

Col de Balme (7231)

Chalet de la Glace

Cabane

Aig. du Bochard

G. de Lognan

Aig. du Tour

Gl. du Tour

Gl. du Mont Blanc

Aig. de Peu

Aig. de la Charpoua

Aig. Verte

Aig. du Moine

Les Droites

Aig. d'Argentière

Glac. de Talèfre

Les Courtes

Le Tour Noir

Col d'Argentière

Aig. de Triolet

Gl. de Triolet

Aig. de l'Eboulement

Les Aschaux

Mont Dolent

Glac. du Mont Dolent

Col du Mont Dolent

Col de la Fenêtre

Col de Triolet

Col de la Neuva

Glac. de la Neuva

Gl. de Saleinoz

Gl. Darrei

Mont Rouge

Col Ferret (8320)

Pré de Bar (6758)

Grueltaz (5784)

la Lechere

le Clou

Chalets de Ferret (5565)

Barberine (3779)

Hotel des Douanes

French Gendarmerie

Le Salvan

Trient R.

Tête Noire (5384)

Hotel (3920)

CROIX DE FER (7478)

Col de la Forclaz (4907)

Gallion (4248)

Trient

Col de Balme (7231)

Pte RONDE (8711)

la Giete

Bonne

Aig. du Tour

Le Clocher (9170)

Pointe d'Orny

Gl. d'Orny

Arpette

Portalet

P. des Plines

Saleinoz

Le Chatelet (8340)

Gabane

Ville d'Issert

les Arlaches

Proz de Fort (3760)

Planereuse

Praillon

la Seilaz (4921)

Sarrières

Amône

la Folly (5240)

Engraved by J. Addison Jun.